

**COOPERATIVE LEARNING IN
THE KEYBOARD LABORATORY:

A STUDY OF ADULT LEARNERS IN A
COOPERATIVE LEARNING PROGRAMME**

**A THESIS
SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS
OF
MASTER OF MUSIC
IN THE
UNIVERSITY OF CANTERBURY**

**BY

JOHN R. W. EMELEUS**

UNIVERSITY OF CANTERBURY 1993

CHAPTER	<u>CONTENTS</u>	PAGE
	ABSTRACT	9
I.	INTRODUCTION	11
1.	General Introduction	
2.	Nature and scope of the investigation	
II.	REVIEW OF THE LITERATURE.	18
III.	MATERIALS AND METHODS	
1.	The Course	47
2.	The Cooperative Learning Programme	77
IV.	RESULTS	
1.	Data :the field trial programme	90
2.	Data :the questionnaire.	145
V	DATA: QUESTIONNAIRE TO COLLEGES OF EDUCATION.	208
VI.	DISCUSSION	213
VII.	ACKNOWLEDGEMENTS	219
	BIBLIOGRAPHY	221
	APPENDICES	
1.	Survey of keyboard laboratories New Zealand Colleges of Education	226
11.	Questionnaire/Control Group	260

111. Questionnaire/ Experimental Group.
264

1V. Field Trial Programme:

Modules One to Five 270

V. Field Trial Programme:

Worksheets Modules One to Five 292

VI. Field Trial Programme:

Support materials Modules One to Five. 299

LIST OF FIGURES

Figure	Page
1. The relationship between the learning, performance and the anxiety factor.	25
2. The relative increase in difficulty of Modules 1-5.	52
3. Number of instruments previously learned by all 36 subjects prior to entry to the course.	149
4. Type of instruments previously learned by all 36 subjects prior to entry to the course.	151
5. Number of years ago subjects learned to play instruments.	153
6. Subjects' perceptions of reading skills on entry to the course.	155
7. Subjects' perception of their reading skills on entry to the course.	157
8. Subject's perception of their reading skills on a 5 point scale.	159
9. Subject's reasons for taking the keyboard course.	161
10. Subjects' perception of their ability to play at least two pieces of music using their right hand.	163
11. Subjects' perception of their ability to play more than two pieces using both hands.	165
12. Subjects' perception of their ability to play two pieces of music using both hands.	167
13. Subjects' perception of their ability to play more than two pieces of music by identifying the actual number of pieces.	169

14.	Subjects' perception of the improvement in their reading skills.	171
15.	Subjects' perception of their attitude at the start of the course.	173
16.	Subjects' perception of their attitude to the course at the end of the field trial period.	175
17.	Changes of attitude recorded between the start of the course and the completion of the field trial.	177
18.	Subjects' perception of how appropriate the contents (modules) of the course were.	179
19.	Subjects' perception of how effective the delivery of the course was.	181
20.	Subjects' perception of the importance of the tutor to the programme.	183
21.	Subjects' perception of the anxiety factor when learning to play the keyboard.	185
22.	Added comments to the questionnaire.	187

LIST OF TABLES

Theory of music tests from Modules1-4.

	Page
1. Module 1 (Test Sheet Two)	9 6
2. Module 2 (Task Sheet Two)	9 7
3. Module 3 (Task Sheet Three)	9 8
4. Module 4 (Task Sheet Four)	9 9

Aural training Modules 1-4

5. Module 1 (Task Sheet One)	104
6. Module 2 (Task Sheet Two)	105
7. Module 3 (Task Sheet Three)	106
8. Module 4 (Task Sheet Four)	107
9. Data from aural training test.	110
10. Data from theory of music test.	113

Performance sections of the Modules 1-4.

11. Module 1.	117
12. Module 2.	118
13. Module 3.	119
14. Module 4.	120

Extension activities

15. Module 1.	122
16. Module 4.	125

Tables illustrating the relationship of subjects to tapes.

17. Relationship between tapes and subjects	130
18. Relationship between tapes and groups	131

Performance of 92A relative to Control Group

19. Module 1.	135
20. Module 2.	136
21. Module 3.	137
22. Module 4.	138

Performance Test

23. Piece 1. Control Group and 92F	140
24. Piece 2. Control Group and 92F	141
25. Piece 1. Control Group and Experimental Group	142
26. Piece 2. Control Group and Experimental Group	143

Questionnaire for subjects.

27. No. of instruments learned prior to field trial.	149
28. Length of time involved learning instruments.	153
29. How long ago learning of instruments took place	155
30. Perception of reading skills on entry to course.	159

31.	Ability to perform 2 pieces, right hand.	163
32.	Ability to perform 2 pieces, both hands.	165
33.	Ability to perform more than 2 pieces, both hands.	168
34.	Total number of pieces learned at end of course.	170
35.	Improvement in reading skills.	171
36.	Improvement in attitude to course.	173
37.	Change in attitude to course.	175
38.	Appropriateness of course contents.	179
39.	Subjects' perception of delivery of course.	181
40.	Importance of tutor.	183
41.	Anxiety factor.	185

ABSTRACT

The thesis examined the proposal that subjects who were training to be generalist primary school teachers and had a minimal background in music, gained more effective initial keyboard and allied general musicianship skills through a programme based on cooperative learning rather than one based on individual, tutor directed, learning.

The history of cooperative learning was investigated with a particular emphasis on recent work and research. There appeared to be an almost total lack of information on cooperative learning as applied to both adult learners and music education. The author devised a field trial programme that addressed both of these areas.

The effectiveness of group tuition methods was tested using the field trial programme through a comparative study of subjects who were involved in a cooperative learning model of tuition, with an equal number of subjects who were tutored on an individual basis. Both groups were taught in a keyboard laboratory. All subjects were presented with an identical programme over the same period of time.

At the conclusion of the field trial programme, subjects were tested on their ability to play the electronic keyboard and also in the area of general musicianship skills.

Conclusions based on data derived from the tests indicated that the subjects in the cooperative learning groups scored more highly in all areas of the programme. It appeared that there was sufficient evidence to suggest that the cooperative mode of learning keyboard and

associated musical skills was a superior one to the more traditional tutor directed programme as evidenced in the field trial programme.

A questionnaire was also sent to all the New Zealand Colleges of Education to determine the nature of courses conducted in their keyboard laboratories. Results indicated that courses were virtually all tutor directed and that cooperative learning occurred only on an informal basis.

CHAPTER ONE

GENERAL INTRODUCTION

Cooperative learning is now a well recognised and established style of learning in schools. From its formative stages when it was no more than a simple system of peer teaching,¹ it has developed into a sophisticated form of learning with an emphasis on the interdependence and cooperation of the learners.²

In a world where competition seems to play such an important part, it is refreshing to come upon a style of learning that actively encourages cooperation rather than the worse aspects of competition with its winners and losers. Cooperative learning does not discourage competition as such but rather concentrates on its enjoyable and non threatening aspects. The cooperative learning world is about success rather than failure and positives rather than negatives. Cooperative learning encourages children in their learning and recognises that each child has a valuable role to play in the education process.

There is a lot of interest in cooperative learning in both primary and secondary schools in New Zealand. Students at the six Colleges of Education are now receiving instruction on how to operate cooperative learning programmes in the classroom. It seems that cooperative learning is here to stay and the indications are that it will become an increasingly important part of our children's education.

1 Johnson D.W., Johnson R.T. and Johnson-Holubec E. (1990) p 6

2 Johnson D.W., Johnson R.T. (1989) 3:26-3:29.

One of the best ways to learn about a new style of learning is to involve oneself as a learner and experience it at first hand. One of the reasons for writing the field trial programme was to provide a group of students with a first hand opportunity to learn to play a musical instrument using a cooperative mode of learning rather than the more traditional, tutor directed style of learning.

It seemed to the author that cooperative learning would probably provide an effective means for teaching students how to play musical instruments and learn a range of associated musical skills. Much music making is, after all, cooperative by nature (choirs and orchestras are two examples).

Many studies on the effectiveness of cooperative learning had been done in relation to a number of subject areas but not, to the best of the author's knowledge, relating to music. In fact, the author had the greatest difficulty in obtaining published information on comparative studies relating to cooperative learning in music programmes. There also appeared to be relatively little information on how effective cooperative learning was for adults. Some studies had been done in this area³ but the results tended to be inconclusive.

The author was therefore presented with a double challenge in his aim to write a programme for adult learners in the field of music education.

³ Slavin R. (1990) Slavin notes that there are relatively few studies on cooperative learning for adults and that results seem to indicate that cooperative learning can be applied successfully to the adult learner even if the results are not as conclusive as those for studies involving children. p 53

THE NATURE AND SCOPE OF THE INVESTIGATION

The investigation considered two specific areas; cooperative learning and the adult learner and cooperative learning and music education. The author found that there was a shortage of specific information about cooperative learning and the adult learner and less about cooperative learning and music education. He did not have the advantage of being able to study a lot of directly related research in these two areas prior to planning his own research programme.

The author conducted a number of data-based searches including the R.I.L.M., E.R.I.C. and DIALOG Information Services Inc.. He used a number of descriptors in different combinations in relation to these searches. He also conducted an intensive search of British publications, some of which did not appear to be covered by the data-based information services mentioned above. He came to the conclusion that there is a distinct shortage of published materials relating to cooperative learning and music education (for both children and adult learners). This shortage of specific information relating to the author's own study presented him with a major challenge given the lack of studies by other authors in his area of research.

The nature of the investigation was to see how well a group of subjects (the Experimental Group) performed when learning to play electronic keyboards in a cooperative learning programme. The subjects had no (or very little) experience in playing the electronic keyboard prior to the programme. In some cases they had learned to play other musical instruments and a few had a slight knowledge of music reading.

The performance of these subjects was to be measured against another group of subjects (the Control Group) with a similar background in music who were also to be taught by a tutor. Both groups were the same size with 18 subjects in each group. Details of the backgrounds of both groups of subjects are included in the study.⁴

The programme was to be identical for both groups. The author was the facilitator⁵ and director for the Experimental Group and the tutor for the Control Group. The field trial programme was to be five weeks long and all subjects would receive a weekly 50 minute lesson. Each lesson would be constructed in modular form making a total of five modules for the field trial period. In the sixth week, all subjects would be required to take an identical practical test on their ability to perform two pieces of music on the electronic keyboard.

Both groups would be divided into two classes and all classes would be held in the keyboard laboratory in the Christchurch College of Education.

Data would be collected from a number of sources.

1. Each module would contain a range of activities that would be assessed.
2. The final practical test would be assessed.
3. At the completion of the course, all subjects would be asked to complete a questionnaire which would provide information

⁴ Ref. p 149-160.

⁵ Johnson D.W., Johnson R.T. and Johnson-Holubec E. (1990) Uses term 'facilitator' p 41.

about the subjects' musical backgrounds and also record their impressions of the programme.

4. Information would be gained about keyboard courses in all the New Zealand colleges of education.

There were three possible results.

1. The Control Group would perform better than the Experimental Group.
2. The performance of both groups would be similar.
3. The Experimental Group would perform better than the Control Group.

The author did not anticipate any of the three possible results. His own research into cooperative learning certainly suggested that in other subject areas cooperative learning had indeed been proven to be a superior style of learning.⁶ He was very aware that the field trial programme might have had serious shortcomings and not indeed have been a suitable one to measure the relative performance of subjects learning to play a musical instrument using a cooperative mode of learning. The author's concerns were based on the lack of comparative studies upon which to model his own programme.

His own previous experience with cooperative learning programmes and music suggested that there might well be areas that could be better taught using a cooperative mode of learning.⁷ He noted that cooperative

⁶ Slavin R. (1989-1990) p 52-53.

⁷ Ref. p. 44 The author referred to one of his own previous studies in which subjects wrote an operetta for children using a cooperative learning model.

learning did not appear to feature to any great extent in the keyboard programmes offered by the other New Zealand colleges of education.⁸ When asked if they made use of cooperative learning in their keyboard programmes, the most frequently made comment was that cooperative learning did take place but not in a structured way. The author assumed that this indicated that students probably engaged in informal peer teaching from time to time as indeed is the case in a lot of learning situations.⁹

The author considered it was essential that all subjects were made to feel that their input to the programme was valued, their efforts were to be encouraged and their individual progress, regardless of whether they were a member of the Experimental or Control Group, was to be seen as being important to the author. He went to considerable lengths to ensure that one group was not advantaged over the other.

The author had a double responsibility; to ensure that he delivered an appropriate keyboard course to his students as well as conducting research into cooperative learning. The field trial programme was perceived by the subjects as being a college course. The contents of the field trial programme were designed to meet the needs of the subjects as prospective classroom teachers of music.

A questionnaire was also sent to all the New Zealand colleges of education to determine the nature of courses conducted in their

⁸ Appendices 1 p.247.

⁹ Topping K. (1988)
Topping noted that children have always helped each other whether encouraged to or not. p 1

keyboard laboratories. Results indicated that courses were virtually all tutor directed.¹⁰

¹⁰ Ref. p 251.

CHAPTER TWO

Cooperative learning

In this chapter, cooperative learning is considered through investigating its parameters, moving from a general definition to an examination of the special features of cooperative learning, how cooperative learning programmes are constructed and finishing with specific references to music education, its possible place in cooperative learning programmes and the author's own interest and involvement in cooperative learning.

The nature of cooperative learning

What exactly is cooperative learning? "Cooperative learning is the instructional use of small groups so that students work together to maximise their own and each other's learning."¹¹

Students 'working together' is really quite an ambiguous statement as it stands in this quotation. Does this mean that if two students decide to work together, cooperative learning will automatically take place? Johnson, Johnson and Holubec are quite clear that this is *not* the case. They state that not all group learning is cooperative learning and claim that five essential components must be present for group learning to be cooperative learning. The five components are positive interdependence, face to face promotion interaction, individual

¹¹ Johnson T., Johnson W.T. and Johnson Holubec E. (1990). p.4.

accountability, interpersonal and small group skills and group processing. This is followed by a detailed definition of each of the five components¹² that make up cooperative learning .

Cooperative learning is sometimes confused with peer tutoring. Peer tutoring is certainly a type of cooperative teaching in that it involves learning between peers with one peer tutoring the other, as contrasted to the traditional teacher (adult) child (pupil) model of teaching. Topping (1988) states that peer teaching must involve a tutor and a tutee.¹³ Cooperative learning on the other hand, is essentially an interactive learning exercise between learners where *each member* of a group is, in turn, a tutor to the other members of the group. Cooperative learning is very much to do with shared learning. The differences between peer teaching and cooperative learning have only been defined in very recent years .¹⁴

The advantages of cooperative learning.

What advantages does cooperative learning have over other styles of learning? Johnson, Johnson and Hulobec¹⁵ see several advantages. They first identify two undesirable styles of learning. The first is a highly competitive style where the learner is literally competing with other learners for a limited number of higher grades with the result that there will always be 'winners' and 'losers'. The second undesirable style of learning is where the students work by themselves to accomplish individualised learning goals. Cooperative learning is the act of working

¹² Ibid p.10-14.

¹³ Topping K.(1988) p.1.

¹⁴ Johnson T., Johnson W.T. and Johnson Holubec E. (1990) p. 6.

¹⁵ Ibid p.3.

together to achieve the same goals thus eliminating undesirable competitive and self centred elements.

Cooperative learning requires that the learners work closely together. There are obvious limits to the number of learners who can combine together successfully. Johnson, Johnson and Hulobec suggest that the number be between two and six.¹⁶

A note of caution is sounded by Sapon-Shevin and Schneidewind.¹⁷ They see cooperative learning as having the potential to make a major impact on both schools and society in general. They say that if students perceive that they will be more clever and powerful as a group, what do they really learn about the spirit of cooperation? This would appear to be a timely warning on the possible abuse of a mode of learning that appears to promise so much.

A brief history of cooperative learning.

Cooperative learning is certainly not a recently developed style of learning and its origins go back to at least the early part of the last century. Indeed there is a veiled reference to cooperative learning in the Bible.¹⁸

"Two are better than one, because they have a good reward for their toil"

The more recent history of cooperative learning goes back to the work of Joseph Lancaster and Andrew Bell who established cooperative learning groups in the poorer parts of London, England at the end of the

¹⁶ Ibid. p 6.

¹⁷ Sapon-Shevin M. and Schneidewind N. (1990) p. 63.

¹⁸ *The Bible*. Ecclesiastics 4;9.

18th Century using a system of school monitors to instruct their peers. Schools based on their ideas (known as Lancasterian schools) were founded in America as early as 1806. In the later part of the 19th. Century, Francis Parker was a strong advocate of cooperative learning and his schools were well known for the cooperative style of learning he encouraged.

In the 1930s John Dewey, Morton Deutsch and Kurt Lewin furthered the cause of cooperative learning through their research work into the effectiveness of cooperative learning between children. A short history of cooperative learning is provided by Johnson, Johnson and Johnson Holubec.¹⁹

These three authors have had a major influence on the progress of cooperative learning in schools and especially in the U.S.A. since the early 1980s. They acknowledge their debt to the work of Deutsch and Lewin. Their work is becoming increasingly well known in New Zealand and is included in some of the education courses at the Christchurch College of Education. This is of importance because the students, who took part in the field work section of the author's study, were already both familiar and enthusiastic about the possibilities of cooperative learning in the primary classroom. This was established through the findings of an informal pre-course survey.

The bulk of research in cooperative learning appears to have taken place very recently and much of it within the past fifteen years. Leaders in the field of cooperative learning including S. Kagan, D.W. Johnson, R.T. Johnson and E. Holubec have undertaken substantial

¹⁹ Johnson T., Johnson W.T. and Johnson Holubec E. (1990) p. 12.

research on cooperative learning. Their experiences with cooperative learning are to be found in a series of texts which are particularly well known to educationalists and teachers working in the field of cooperative learning.²⁰

Some recent research on cooperative learning has examined the ways in which cooperative learning can be practised in the classroom. The field work *modus operandi* of the author's study is largely based on principles outlined by Johnson, Johnson and Hulobec. The detail of the course structure itself is more influenced by the work of Kagan who proposes several possible models.²¹ Cooperative learning has come a long way since its early formative stages. It is clear that, as a mode of learning, it is still very much in an evolutionary stage.

The Adult Learner

Because the field trial programme was concerned with adult learners, the author considered that it is important to consider what the characteristics of adult learners are.

"Education is a life long process, not a commodity one 'gets' and stores away for some future use".²² The adult learner can be seen as occupying an area somewhere along the continuum of life because the points of entry and exit will vary from one adult learner to the next. This poses a question. What do we mean by an 'adult'? Rogers suggested that it could refer to several different things; a stage of life,

²⁰ There are a number of recent publications concerned with cooperative learning. The author has included a number of these in his study on cooperative learning. He refers especially to the publications of S. Kagan, D.W. Johnson, R.W. Johnson and E. Hulobec to be found in the Bibliography section of his study.

²¹ Kagan S. (1990) C 19:1, C 19:10 and C 19:16.

²² *Encyclopedia of educational research*. (1992) p.30.

status in life or it could be included in a set of ideals or values which together made up the concept of adulthood.²³

The National Advisory Council for Adult Education saw the adult learner as "an adult who is enrolled in any course of study, whether special or regular, to develop new skills or qualifications, or improve existing skills or qualifications."²⁴ The author found the above definition to be a tidy one which covered a wide range of possibilities.

Adult learners display a range of characteristics. Rogers identified six characteristics.²⁵ One of these, which stated that adult learners already had their own patterns of learning, appeared to be of particular interest to the author in connection with the subjects in the field trial. Many of the subjects entered the field trial programme with a wide background of experiences and were, for the most part, a group who had already gained University degrees in a variety of subject areas.

It is easy to assume that some adult learners know more than they do. Brookfield says that "it is misconceived to talk of the self directedness of (adult) learners, who are unaware of alternative ways of thinking, perceiving or behaving."²⁶ The author considered that this was a valid point. One subject had a far higher perception of his general musical ability in the field trial than was justified. A problem for the author was to make the subjects aware of their real ability without damaging their self esteem too much.

²³ Rogers A. (1986) p. 5.

²⁴ National Advisory Council on Extension and Continuing Education. *A special report to the President and the Congress of the United States.* (1979)

²⁵ *Opcit* p. 24.

²⁶ Brockfield S. (1986), p. 124.

Rogers believed that "anxiety is a characteristic of many adult learners."²⁷ He then elaborated on this statement saying that a fear of the unknown coupled with a fear of possible failure could cause considerable anxiety in some adult learners and possibly also adversely affect their learning patterns. He noted that this particular form of anxiety did not appear to occur as frequently with children.

The author agreed with these statements and was very conscious of their implications when he planned the field trial programme. Every effort was made to insure that subjects were given tasks that were not beyond their ability. Some of the subjects did indeed display some of the characteristics described by Rogers. What was of particular interest to the author was that the subjects' perceptions of their own ability, and especially at the start of the programme, were often very low. The author found that a policy of positive reinforcement was most helpful and the problem tended to lessen as the field trial progressed.

Adult learners in the field trial programme were of a mixture of ages with the vast majority in the 18-26 age bracket. The anxiety factor seemed to be more evident with the older members of the subject group (that is, those older than 26). In two cases they saw their age as a disadvantage, their perception of the other learners was that they were younger and would find it easier to play a keyboard. They actually performed as well as the other subjects but needed constant assurances that this was the case.

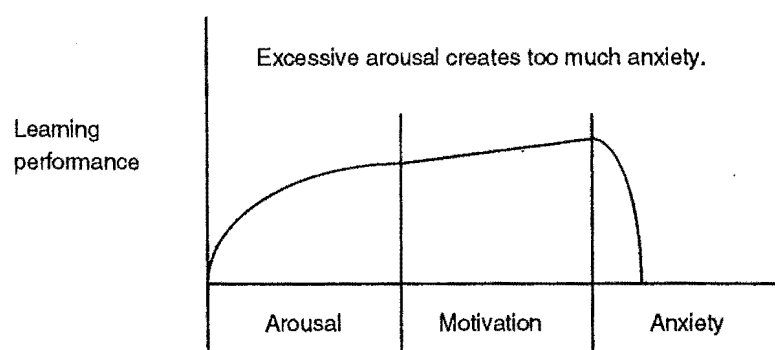
²⁷ Opcit p 163.

Rogers noted that "anxiety becomes highest at the times of evaluation, tests or examinations."²⁸ This was also a factor that the author took into consideration. He decided to give tests a low profile in the field trial because he was afraid that poor results could have resulted in a lowering of self esteem (another point noted by Rogers) and could have detrimental effects on the field trial programme as a whole. It is for these reasons that the author followed Kagan's instructions that "for many students feedback from peers is more valuable than marks from a teacher."²⁹

Rogers postulated that over stimulation (too high expectations) could increase the anxiety factor and thus prevent learning from taking place.³⁰

Figure 1

The relationship between learning performance and the anxiety factor



Adult learners therefore require different presentations of programmes rather than different programmes if they are to realise their potentials. Adult learners present different challenges than do children. Brookfield summarizes the differences between adult and

²⁸ Ibid. p.163.

²⁹ Kagan S. (1990) Chapter 20:16.

³⁰ Rogers A. (1986) p.165.

childrens learning when he says that "children or adolescents tend to regard the world as continent or malleable" whereas adults do not.³¹

The cooperative model of teaching and the adult learner.

By far the bulk of literature concerned with cooperative learning is concerned with children. There seemed to be a real shortage of documented literature regarding the adult learner in a cooperative learning situation. The author also researched a number of studies concerning cooperative learning in the area of children's learning, in most cases they appeared to have relevance when related to adult learners.

Typical of the literature available on adult peer learning was a short excerpt from an article concerned with introducing university methods students to high school teaching. In their class students peer-taught each other rehearsing effective teacher behaviours such as maintaining eye contact, etc.³²

The author conducted two data based searches to obtain information in this area of cooperative learning and the adult learner with an almost complete lack of success. This came as a surprise because the author's own (if limited) experience in this field had been a most rewarding one. The author considered that there could well be considerable scope for research in this area in the future.³³

31 Brockfield S.(1986) The diagram appears as Figure 35a p.125.

32 Hughes W. (1992) *From methods to practise in general music.*

33 Ref. p. 217-218..

Slavin noted that the number of studies on cooperative learning decreases as the age of the subjects increases and that there are relatively few studies in cooperative learning that have been conducted at adult level.³⁴ He also made the point that results of research at this level were not as consistent as those for junior and middle high school levels. The author wondered if the fact that there was indeed such a small number of available studies might, in itself, make it difficult to establish patterns and trends in cooperative learning for adult learners.

The author examined three studies cited by Slavin: two (related) studies concerned with cooperative learning in a college (University) and the third in a senior high school.

The college based studies were of particular interest to the author in that his own study was with a group of subjects also in a tertiary institution (in his case, a college of education). The numbers involved in this study were very large (382) with 170 in the Control Group and 212 in the Experimental Group.

The first two studies dated from 1977. These examples were not recent ones which was interesting in that Slavin wrote his article in 1990 and, given his eminence in the field of cooperative learning, might have been expected to have provided examples of more recent research. The other somewhat unexpected aspect of these examples was that the cooperative learning the Experimental Group engaged in, appeared to amount to little more than an exercise in mutual coaching. The actual studies were undertaken by S.C. Fraser (and others).

³⁴ Slavin R.E. (1990). p 53.

In the first study, subjects worked in pairs. The Control Group was presented with the same course. Results suggested that the Experimental group performed better than the Control group in a series of tests.³⁵ The second of the two studies was the same as the first except that this time subjects worked in groups of two, three or four. Results from this study appeared to indicate that the groups of two performed better than the groups of four but overall, results were superior to those achieved by the Control Group.³⁶

The author found that there were two features in these studies that merited special mention. The first was to do with motivation. Subjects were told that their scores from tests would be the average of results obtained by the group. The concept of sharing grades is referred to in the literature concerned with cooperative learning as one of the ways of achieving positive interdependence.³⁷ The author did not adopt this method in his own study. He considered that it could have introduced an undesirable variable into the field programme and caused unnecessary stress. The stress factor in adult learning is examined later in the thesis.³⁸

The second point of interest concerned one of the negative results obtained from the subjects' evaluation of Fraser's study. Some of the subjects felt that they should have been given a choice as to whether they took part in the study or not. The author had discussed the question of participation with his subjects prior to the start of his own field trial. There appeared to be have been no problems and the

³⁵ Fraser et al. (1977) p101-108.

³⁶ Ibid. p 101-108

³⁷ Johnson T., Johnson W.T. and Johnson Holubec E. (1990). p 83-86.

³⁸ Ref. p 177 -178.

question of participation was not mentioned in the subjects' evaluations of the course.

The third study was conducted in a high school. It involved 38 subjects with 20 in the Experimental Group and 18 in the Control Group. (the author had 36 subjects in his study with equal numbers in both groups). In this study, students worked in fours. The results again indicated that the subjects in the Experimental Group performed better than those in the Control Group.

The author noted that in the various studies on cooperative learning he examined, the size of the groups were rarely the same although they were usually numerically similar to each other.

Topping cited the work of Fletcher and Fawcett (1978) who described a learning centre for adults from low income groups which operated on a system of peer tutoring.³⁹ This practical application of peer tutoring provided a good illustration of how costs can be kept down when using a system of peer tutoring. This study appeared to capture the spirit of very early work in cooperative learning when a system involving peer teaching was used to bring education to children from low income groups.⁴⁰

As has been noted before, the author conducted a number of data based and other searches when researching the literature on cooperative learning and music education.⁴¹ There appeared to be a

³⁹ Topping K. (1988). p 5.

⁴⁰ Ibid. p 13.

⁴¹ Ref. p 13.

distinct shortage of information on cooperative learning in the field of music education for either children or adults. A lot of the available information was of peripheral value only to the author.

Some of the available literature only touched lightly on music education and was more concerned with the integration of music education with other subjects.⁴² There were, however some studies that did contain areas of interest to the author.

The London Sinfonietta education programme involved professional musicians and music education in schools.⁴³ The actual construction of this programme was of particular interest and included a number of features advocated by Kagan⁴⁴ and also aspects of shared responsibility and interdependence.⁴⁵ This study was seen as having been most successful.

Another British study involved a peer teaching exercise between a group of sixth form students working with students from a special school.⁴⁶ This study included comments on interpersonal skills which are an important feature of cooperative learning. A similar study was conducted by Dykman.⁴⁷ Results from both studies were supportive of the effectiveness of cooperative learning in the area of working with handicapped people.

⁴² Holt, D. et al. (1988). p. 48

⁴³ Ruffer D. (1988). p 44-45.

⁴⁴ Kagan S. (1990) Chapter 19.

⁴⁵ Johnson T., Johnson W.T. and Johnson Holubec E. (1990). p.77.

⁴⁶ Tipton, D. (1989) p 55-58.

⁴⁷ Dykman R. (1979) p 58-63.

A study by Freidmann ⁴⁸ demonstrated that virtually all of the fundamentals of music and some performance skills can be developed in a cooperative learning programme with subjects working in small groups (in school programmes). This information was reassuring to the author because the fundamentals of music and performance skills formed the major part of his own field trial programme.⁴⁹ Cooperative learning was seen as a successful mode of learning in all of these studies.

Motivation and cooperation

The word *motivation* comes from the same root as the word *motion* and means something that *moves* a person.⁵⁰ Cooperative learning between subjects will not take place unless the subjects themselves are able to identify clearly what the outcomes of the shared learning situation are going to be. It is necessary to present the programme to them in such a way that they will feel sufficiently motivated to fully participate in a programme of learning that they will be required to share with others.

A psychologist, Kalat, found it hard to define exactly what motivation was.⁵¹ Lautzenheiser believed that the only true form of motivation is self motivation.⁵² Another perspective given by Johnson and Johnson on what motivation might be, described it as "a combination of the perceived likelihood of success and the perceived incentive for success".⁵³ (The author found this definition to be

⁴⁸ Friedmann M. (1989). p 53- 56.

⁴⁹ Ref. p. 72

⁵⁰ Kalat J. (1990). p. 337.

⁵¹ Ibid p. 337.

⁵² Lautzenheiser T. (1990). p. 34.

⁵³ Johnson D.W. and Johnson R.T. (1991) p. 38.

particularly helpful.) These last two examples could be seen as being complementary rather than conflicting. There are a number of other theories related to motivation including the 'drive' theory in which Hull described motivation as being in the nature of an irritant. Hull's theory postulated that motivation might not result in a specific action.⁵⁴ This small sampling of opinions on what motivation actually means, illustrates that there are a number of different definitions.

Motivation may be either intrinsic or extrinsic.⁵⁵ Subjects enter a course with the expectation that there will be clearly defined outcomes. At the end of the course they may wish to be able to perform a number of tasks and demonstrate skills that they did not have on entry to the course. They may define their personal goals in a variety of ways and indeed display a variety of intrinsic and extrinsic reasons in the process. Subjects might, for example, take an instrumental course because they saw a possible outcome as being that the acquisition of an instrumental skill might enhance their prospects of gaining a teaching position in a school. This would have an extrinsic reason for learning to play the particular instrument. On the other hand, a subject might have recalled pleasurable experiences gained from earlier experiences with music and considered that learning to play a musical instrument would also be enjoyable. This would be an example of an intrinsic reason for taking an instrumental course.

Kagan said that if cooperative learning could be based on having new experiences and sharing these experiences with one's peers, no extrinsic reward would be needed to involve students in these

⁵⁴ Hull C. (1943) p. 11.

⁵⁵ Leonhard C. and House R.W. (1959) p.133.

activities⁵⁶. The author found that the subjects in the field trial programme were very committed to sharing new information with their teaching partners and data suggested that information was accurately transferred from one teaching partner to the other in a mutually supportive teaching atmosphere.⁵⁷

When the subjects entered the field trial programme, they were asked why they selected the keyboard rather than the guitar as an option when entering the field trial programme. The most frequently given answer was that they wanted to learn to play the keyboard. Taken at this level, it would appear that their reasons were intrinsic ones. Only a few said that they wanted to play the keyboard because they wished to use it in the classroom at a later stage which would have been an example of extrinsic motivation.

It is probable that most subjects would have entered the field trial programme for a number of reasons, some of which would have been intrinsic and others extrinsic. A study of the relative strengths of intrinsic and extrinsic motivation in cooperative learning programmes could form a useful research topic. It is, however, outside the scope of this study.

⁵⁶ Kagan S. (1990) 20:16

⁵⁷ Johnson T., Johnson W.T. and Johnson Holubec E. (1990). p6.

Designing a cooperative programme

Kagan, D. Johnson and others have undertaken a lot of research into how to design an appropriate model for a cooperative learning programme. Kagan is recognised as being a leader in this field and he proposes several models of cooperative teaching models. His models, to which he gives an overall descriptor of "project designs",⁵⁸ are concerned with childrens' learning and are very much to do with classroom situations. Kagan's work is concerned with cooperative learning between children whereas the author's task was to design an appropriate model that would meet the needs of adult learners. The author acknowledges Kagan's influences on the programme that he devised.

The author's programme did not follow any of Kagan's models in detail but rather attempted to synthesize elements from several models. The programme adhered to the basic concept of cooperative learning, namely the interactive sharing of information between learners with each learner being both the provider and receiver of information. At best, the author's design for the cooperative programme that he used for the field trial programme could be said to have used elements of Kagan's "Jigsaw" designs.⁵⁹

⁵⁸ Kagan S. (1990) C.19:1.

⁵⁹ Ibid. Chapter 19 provides several examples of cooperative learning programmes, the author refers to these models by name, for example, "Coop, Coop, Jigsaw, Jigsaw II" etc. The original "Jigsaw" design for the classroom was created by Elliot Aronson. Each student in a learning group specialised in one aspect of the learning unit and taught other members of their group. Kagan states that the

An early task which faced the author was to design a programme in such a way that each member of each teaching pair would feel that his/her contribution to the programme would be critical to the 'flow' of the programme as a whole. He found Dalton's work with children and cooperative learning programmes to be most helpful when designing the field trial programme.⁶⁰ In particular he noted the section on the classroom environment and found that the guidelines which stressed the importance of fostering mutual respect and encouragement to be particularly useful. Another feature of this book is that it has particular relevance to teaching in Australia and provides a useful foil to the bulk of the literature on cooperative learning which originates from the United States.

The author attempted to follow Kagan's concepts of "task specialization designs."⁶¹ Kagan proposed that each student in turn should be in the position of 'status', as the provider of information. The author provided subjects with this opportunity by having each member of the pair as the 'teacher' in alternate modules. Kagan recommended that pairing is a good place to start from for the inexperienced in cooperative teaching. The author agreed with this, based on his own experiences of having worked with pairs (as in the field trial keyboard programme) and also with groups with as many as six members.

Cooperative learning is very much to do with achieving a good balance between cooperative and individualistic learning.⁶² Each

number of possible variations on the "Jigsaw" are considerable. He details several models in Chapter 20 of his text "Cooperative learning."

⁶⁰ Dalton J. (1985) p.4.

⁶¹ Ibid. Chapter 18.

⁶² Johnson D.W. and Johnson R.T.(1991). p. 24.

partner gains knowledge and understanding of pieces of information independently of the other (individual learning) which, at a later stage, is shared with the individual areas of knowledge of other members of their group to create a common knowledge (cooperative learning). A 'jigsaw' effect is achieved in that the individual pieces of knowledge are required to lock together to achieve the total 'picture'. Both Kagan and the Johnsons stress the importance of the relationship between cooperative and individualistic learning.

On the subject of briefing, Kagan proposed that both halves of the class were given different (but complementary) material to master, with students with the same material seated together as they mastered the new concepts. They then found a partner and taught each other.

The author followed a fairly similar pattern except that he only briefed one half of the class at a time (as a group, as in the Kagan model) before each lesson. The other half of the class were then briefed at the start of the next lesson. He decided that a double briefing for each lesson would have created an extremely complex and probably unworkable structure. The short time available for the tutorial (50') added to a rigid college timetable were the main reasons for this decision. Had the author had the opportunity to work with the subjects over a longer lesson time (for example, had each class been two hours long), he would have adopted a double briefing model. The briefing took ten minutes before the start of each lesson .

The 'teachers' selected their partner and retained the same partner for the remainder of the field trial. Partners should have been of the same ability in terms of background as far as playing the keyboard was

concerned because the field trial course was designed for beginners or near beginners in terms of keyboard skills. Gazdo saw several advantages for the 'learner' (as the one being taught) and perceived them as being more perceptive and responsive ⁶³ (he coins the word 'facilitative'). Kagan appeared to leave the matter of whether partners should be of the same ability or not as a fairly fluid affair.⁶⁴

Kagan proposed that worksheets should be used throughout cooperative learning programmes. The author adopted a system of worksheets (he called them 'Task Sheets') and allocated one sheet to each module (a module was completed in the course of a lesson).⁶⁵ The worksheets were separate to the module booklets and were designed so that they would test the knowledge gained by the subjects during each lesson. They were completed by the individual members of each pair. Data from the worksheets was then collected for analysis. The module booklets,⁶⁶ however, were designed so that pairs could work through them together and attempted to fulfil the functions Kagan describes relating to the "steps of partners".⁶⁷

The author did not adopt a scoring system with the subjects. He considered that a scoring system could have introduced a potential variable. He did however collect data from several parts of the programme for the purposes of research. Kagan considered that a scoring system had only limited value (the author agrees with this

⁶³ Gazdo G.M. (1973) p. 24.

⁶⁴ Kagan S (1990) Chapter 18:2.

⁶⁵ Ref. Appendices V p. 293.

⁶⁶ Ref. Appendices IV. p. 270.

⁶⁷ Kagan S (1990) C 18:2.

point of view). He suggested that 'for many students, feedback from peers is more important than marks from a teacher.'⁶⁸

Evaluation

After the assigned tasks have been completed, it is most important that there are opportunities for the subjects in the shared learning experiences to evaluate what has been achieved. There are two parts to this exercise. Consultation should take place *within* the cooperative learning groups, and *between* the groups and the tutor.

Kagan refers to this as a time for 'reflection and evaluation'.⁶⁹ He sees it as presenting students with an opportunity to reflect on their social skills and, in particular, in areas such as equal participation and cooperation. He stresses the desirability of an evaluation of results by other members of the class from other groups, of team mates evaluating each others performances and some sort of presentation of the individual tasks within the groups.

The author involved subjects from the Experimental Group in two distinct forms of evaluation. An evaluation that took place at the end of the lesson (which was the same as the completion of the module) and an overall evaluation of the field trial itself.

The lesson evaluation was not tightly structured. Subjects had opportunities to consult with each other at all stages of the learning processes as well as at the end of the lesson. The author asked the

⁶⁸ Ibid. C 20:16.

⁶⁹ Kagan S.(1990) Chapter 19:7

group as a whole how the lesson had gone and reactions from the groups were discussed by all of the class and the author. The most involved discussion took place at the end of the Module Two which presented the subjects with a number of challenges. Some subjects had found the challenges to be almost excessive whilst others had found them quite attainable. The discussion was a very warming and supportive one with the outcome that all felt that the objectives of the module were attainable. As a result of the discussion some pairs decided that they would meet in the keyboard laboratory before the next lesson and revise those aspects of the module that had caused problems.

The author made a limited use only of Kagan's proposal that subjects should demonstrate their new found skills and understandings to each other as a part of the evaluation process. Subjects did from time to time demonstrate their ability to perform, but opted to do this in pairs. The author did not insist on demonstrations of individual skills to the whole class. He considered that this could have been a very threatening experience for many of the subjects and might have done more harm than good.

A detailed evaluation of the total field trial was undertaken by all members of the Experimental (and Control) Group at the end of the field trial. The evaluation was a written one and took the form of a questionnaire. Results from the questionnaire are considered at a later stage of this study.⁷⁰

Competition and cooperation

Johnson and Johnson considered that competition is most appropriate when it is viewed not as a crucial test, but, as an interlude, fun or a change of pace.⁷¹ Cooperative learning programmes discourage the negative aspects of competition, that there are winners and losers. Rather it focuses on the positive. J. Austin postulated that competition actually curtailed student achievement.⁷²

The author encouraged an element of light hearted competition into the field trial programme when pairs in the Experimental Group had finished preparing their pieces and the whole group jointly performed them together. Unfavourable comparisons between pairs, to the best of the author's knowledge, were never made and the exercise contributed to the overall enjoyment of the programme as a whole.

Misconceptions about cooperative learning

Several misconceptions about cooperative learning are discussed by Johnson and Johnson ⁷³ The author felt that a number of these were of particular interest in the light of his own experiences with the field trial programme. These misconceptions are written in italics, the response from the text is given in a summarized form (in underlined text) followed by a brief comment from the author.

The world is full of competition, so schools should encourage it.
This is not the case because we live in an interdependent world. The

⁷¹ Johnson D.W. and Johnson R.T. (1991). p.111.

⁷² Austin J. (1990) p. 21-26.

⁷³ Johnson T., Johnson W.T. and Johnson Holubec E. (1990). p. 129-136.

author noted that the desire to share information was probably the most distinctive feature of the field trial programme.

High achievers are penalised by working in mixed ability groups. It is true that middle and low achievers gain a lot, however, research conducted by the authors indicated that high achievers are not disadvantaged. The author did not detect any obvious signs of frustration on the part of the more able members of the Experimental Group, nor did this feature in the results of the questionnaire completed by the subjects⁷⁴

Every member of the cooperative group has to do the same work and proceed at the same rate. Each member of the group can be given individual tasks that match the level of their ability. On the question of the same work, this was a feature of the field trial programme, however the means and quality of communication varied according to the individuals. The programme offered extension areas for subjects who completed work early.

The progress and achievement of the Experimental Group had to be measured against the Control Group so that reliable data could be obtained. It was necessary to control aspects of the programme such as content and time management to achieve a common base between both groups.

Using cooperative learning is simple. The concept itself may be simple but the implementation of the concept is not. The author agreed with this; it proved to be a considerable challenge to both devise and

implement a cooperative learning programme concerned with developing keyboard and allied general musicianship skills. The lack of information about cooperative learning between adults proved to be a problem as did the lack of information about how to apply the principles of cooperative learning to music programmes.

The scope of cooperative learning relative to specific subject areas.

The literature concerned with cooperative learning tended to concentrate more on aspects of the philosophy and structures of cooperative learning rather than on specific areas of the curriculum. However, there are a number of references as to how cooperative learning can be applied to specific subject areas in the curriculum. This was of particular importance to the author who required guidelines as to how to structure a cooperative learning programme relative to a music education programme.

Cooperative learning is now applied to a number of areas of learning in school based programmes. The author found that the following subject areas were specifically mentioned in relation to cooperative learning; Social Sciences and Science,⁷⁵ Mathematics⁷⁶ and English which was used widely in all the proposed models. There appeared to be a lack of information relating to music education.

Cooperative learning and music education

⁷⁵ Kagan S. (1990) Chapter 19:13.

⁷⁶ Andrini B. (1990) p. 46.

Music making is essentially a cooperative activity. People of most ages sing in choirs and play in instrumental groups. Other people often listen to them. There has to be a high degree of cooperation between the musicians for the results to be aesthetically pleasing for both the participants and their audience.

The same is true of many aspects of music education programmes and especially in those areas where musical performance is concerned whether it is a recorder class of eight year olds or a high school jazz band.

The objectives of the new music syllabus are to *create* music, to *recreate* music and to *appreciate* music.⁷⁷ All three objectives are closely associated with the performance of music and therefore a degree of cooperative effort would be necessary for children to achieve these objectives.

Instruments are often taught in groups and there have been many outstanding examples of excellent results recorded from this form of tuition. Yvonne Enoch is a pioneer in this field and her work with groups of children working on the keyboard is well known.⁷⁸ A study on group piano tuition has been done by Jefferson.⁷⁹ Jefferson concluded that there is considerable potential in this particular form of tuition. For group tuition to succeed, the participants must cooperate not only with the other but also with the teacher.

⁷⁷ *Music Education. Early Childhood to Form 7* (1990) p 3.

⁷⁸ Enoch Y. (1974) p 1.

⁷⁹ Jefferson M. (1981) p. 198.

The Suzuki Method, for example, is very well known in the field of group tuition. This method makes use of both individual and group methodology, is very structured and most successful.⁸⁰ The Suzuki method provides a rare example of shared learning across age groups in music programmes. The parents are very much involved in the learning experiences along with their children.

In New Zealand, the Christchurch School of Music (formerly the C.S.I.M.) is well known for the success of its group instrumental teaching programmes.

An example of shared learning within a music programme can be found in the Music Award Scheme.⁸¹ Sections of the scheme are designed to encourage children to share their musical knowledge with their peers. One example, in the Bronze Award Instrumental Performance section, specifically asks the participant to help a friend to play an instrument.

Although cooperation is an important element in music making, devising structured programmes that utilise the ideas behind cooperative learning by contemporary leaders in this field, such as Slavin and Kagan, is another matter and this probably accounts for the apparent lack of studies in the area of cooperative learning in music education programmes.

⁸⁰ The Suzuki Violin Method. Summy Burchard.

⁸¹ The Music Award Scheme. *The Society for Music Education (Canterbury) Inc.*, (1992) p.7.

The author believes that this is an area where research could be done and would probably be of benefit to both music education and music educators.

The actual amount of research into cooperative learning in school based music education programmes appears to be slight which, given the cooperative nature of much music making, seems unusual. On the other hand there is a wealth of research relating to cooperative learning in many other subject areas in primary schools (and, to a lesser extent, in secondary schools). It is very probable that work has been done in this area but the results have not been widely made known or published. The author has researched a wide range of sources and also used a data based search with very little success.

The author and cooperative learning

The author's interest in the possibilities of cooperative learning in music education programmes can be traced to observing two children of about nine years old, helping each other to play the recorder. One child understood more about the technique involved in playing the recorder whilst the other had some elementary knowledge of music reading which the other did not have. Between them, they achieved a lot and gained from each other's support in the process. The author was particularly interested in their considerable ability to both communicate and cooperate with each other in ways that would have been far removed from those used by their teacher but were still extremely effective.

This incident led to the author experimenting with a form of peer teaching between students in his courses at the Christchurch College of Education. He then tried something more elaborate and involved a group of six students in the composition and production of an operetta for children. In this exercise each member of the group had a specific task and was also interdependent on the others in the group⁸². This model of cooperative learning was intended to reflect the spirit of Kagan's work on cooperative projects.⁸³ A school had been contacted and informed that their children receive a performance of the operetta at a time when the group had yet to decide on a story, let alone written any text or music. The performance went ahead at the scheduled time and appeared to have been a most successful one. The group had considerable motivation to complete the task as a failure to do so would have reflected badly on them.

The author then felt sufficiently encouraged to experiment with cooperative learning between adults in the field of instrumental performance, which is the subject of this study.

⁸² Kagan S. (1990) C18:9.

⁸³ Ibid C 15:1.

CHAPTER THREE

The Field Trial Programme

The Course

Because the course was written for primary trainee teachers, there were a number of features which were built into the programme that were designed to relate to their special needs. One of the aims of the programme was to provide students with a sufficient background in keyboard skills so that they would be able to use the keyboard in their own classroom programmes. Bearing this in mind, a lot of the material in the course had a distinct classroom orientation and especially in the repertoire of songs that were selected.

The course was designed to be a 'hands on' one. Subjects were able to perform simple melodies, using the right hand only, at the end of the first lesson. By the end of the fifth lesson, subjects, in the vast majority of cases, were able to perform two or more pieces of music involving the use of both hands and the ability to read simultaneously from both staves. The author has found that the maxim that 'success breeds success' was very true with subjects achieving very good results.⁸⁴

Above all, the course was intended to give the subjects a wide range of musical experiences. In addition to performing repertoire, the course included sight reading, ear training, and an understanding of the theory of music. Taken as a group, these skills were aimed at developing overall musicianship skills. Enoch supports the view that a

⁸⁴ Ref. p.117-119.

well constructed group keyboard tuition course will enhance general musicianship skills.⁸⁵

The author believed that the ability to sight read music should be an important part of learning to play an instrument. The importance of sight reading has been recognised by the music examination bodies such as the Royal Schools of Music for many years⁸⁶. The author agreed with the research findings of Zentz who stresses the importance of a silent perusal of unknown music prior to its performance.⁸⁷ The author adopted this procedure during the field trial programme. The examples of sight reading in the modules did not contain fingering thus forcing the subjects to read the notes.

Ear training was also seen as an important activity and was used to focus the subjects' attention on patterns of sounds. Ear training also features in the syllabus of music examination bodies.⁸⁸ The author believes that an understanding of the theory of music should go hand in hand with the performance of music and relate directly to music that is being studied. He believes that this is particularly true of the early stages of musical performance. The relationship between reading and performance skills has been recognised by examination bodies for many years. The author noted that most beginner tutor books also contained sections which explained the theory of music as the need arose, in relation to music that was being studied.⁸⁹

⁸⁵ Enoch Yvonne. (1993) p. 12-13.

⁸⁶ Syllabus of the Royal Schools of Music. (1992).

⁸⁷ Zentz D. (1992) p 33.

⁸⁸ Syllabus of the Royal Schools of Music.(1992).

⁸⁹ There are many examples including the following;

Palmer W. *The easiest way to play your portable keyboard* (1987).

Bastien J. *The Older Beginner Piano Course* (1977).

All these activities were written into the programme so that they both supported and reinforced each other rather than appearing as separate and disparate elements. In all the modules an effort was made to tie new skills and understandings together. For example, in Module One, subjects started by repeating rhythms using only one note. This activity was followed by another one where rhythms using only one note were notated and performed.

The keyboard programme will be covered under the following headings;

1. The overall objectives of the programme.
2. The contents of the programme.
3. Data resulting from the field trial programme (during the programme).
4. Data resulting from the practical and written tests (at the end of the programme).
5. Monitoring the programme.
6. Evaluating the programme.
7. Conclusions.

1 The overall objectives of the programme

At the end of the programme subjects will be able to -

demonstrate an ability to perform a repertoire of songs suitable for the primary school classroom on the keyboard.

demonstrate an understanding of the theory of music to a level that matches the ability of subjects to perform a repertoire of pieces on the keyboard.

In addition to the overall objectives for the field trial programme, each module had its own set of objectives which were related to the content of the module but was still lay within the overall parameters of the objectives of the field trial programme as a whole. These objectives are stated at the start of the description of each module.

The contents of the programme

The field trial programme consisted of 5 Modules.⁹⁰ The Modules were delivered at the rate of one per week over a continuous period of 5 weeks.

The revision areas indicated at the start of the Modules 2, 3, 4, and 5 pick up the repertoire section from the previous module.

90

All the modules are included in Appendices IV. p .270-291.

The final section of each module was designated an 'extension' time. This time was set aside for subjects who had completed the rest of the module before the allocated times for the various activities included in each module. It provided the subjects with an opportunity to learn a further repertoire of pieces. No new skills or understandings were introduced in this part of the programme.

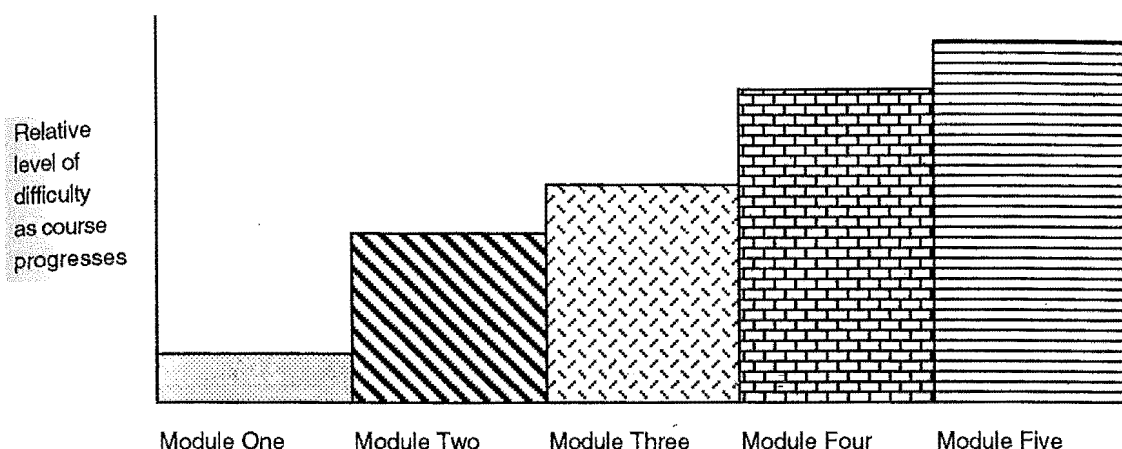
The Modules are included in the appendices.⁹¹

Each Module was presented in the form of a booklet and was colour coded (the cover only of the Module) as follows ;

Module One (*Yellow*), Module Two (*Green*), Module Three (*Red*),
Module Four (*Blue*) and Module Five (*Orange*).

A system of colour coding was used for easy identification purposes and also because the use of different colours made the module covers more visually attractive.

The Modules were not all of the same level of difficulty. Module Two was particularly challenging in that the bass clef and left hand chord work were introduced for the first time into the programme. Module Four contained tied notes. The author has found from his own experience, that these too presented the beginner keyboard player with some difficulties. The diagram below indicates the ongoing nature of the structure of the modules in terms of their relative difficulty.

Figure 2The relative increase of difficulty of Modules 1-5

The order of contents for Modules 2, 3, 4 and 5 were very similar. The format for Module One was slightly different because Module One was the introductory Module to the course. A list of objectives was given at the head of each Module. These were presented in the form of a list of contents. The contents then followed and were presented as a series of activities. They were identified in the Modules as 'Activity One/Ear training' etc.

Time management was an important aspect in the delivery of the modules. As the Control and Experimental Groups were presented with the same programme content, it was most important that the time allocated for each of the activities was consistent for each group. Had the time allocations not been the same, this could have given rise to variables in the relative performance of the two groups. The time allocation was inserted after each activity when the content of the Modules is given, for example, "Ear Training" (5'). The total length of each module was 50 minutes.

The Experimental Group were given an extra 10' for a briefing session by the author before the lesson began.

Module One (Yellow)

Objectives

At the end of Module One subjects will be able to

- operate an electronic keyboard;
- display a correct posture at the keyboard;
- demonstrate a knowledge of basic theory;
- * demonstrate the ability to perform three pieces of music (right hand only);
- * display an ability to repeat patterns of notes

Module One contained the following activities;

Orientation (10')

Activity One/Ear training (10')

Activity Two/Theory of music (10')

Activity Three/Playing melodies (10')

Activity Four/Theory Check Point One (5')

Activity Five/Extension (5')

Orientation

Module One was an introductory Module and, at the start of the delivery of this module, students were given specific instructions on matters relating to the programme as a whole, the use of the keyboard laboratory and, in particular, how to operate the appropriate functions

on the keyboard that was used for the course (the Yamaha PS 75 model). Correct posture at the keyboard was also discussed.

Activity One/Ear training

(i) 5 two bar rhythms using one note only were played., each one was repeated. After the second hearing, the subjects played back the rhythm. The notes used were from Middle C to G (second line,treble clef), the first example used only Middle C, the second D and so on to G. The objective of this exercise was to using all the five fingers of the right hand.

(ii) A two bar rhythm was played twice. The repetition was not always the same. Subjects recorded 'S' (same) or D (different). 5 examples were given. Answers were recorded in the task booklet.

Activity Two/Theory of Music

A number of the subjects in all the classes already had a rudimentary knowledge of the theory of music so this first session on the theory of music was largely revision for some members of all the four classes.⁹² The field trial used the fraction method for teaching notation. This is now used widely in instrumental beginner tutor books and is particularly well suited to adult beginners who have a better understanding of fractional concepts than do young children. The author had used this particular method with adult learners for a number of years. The treble clef and the notes from Middle C to G were introduced. As many of the subjects had played the recorder in the

⁹² Ref. p. 270-293

previous year, it was assumed that they would have had some knowledge of the treble clef.

Activity Three/Playing melodies

The first reading exercise involved reading a series of rhythms written on one note, starting with middle C. This served to consolidate the revision of the reading skills as well as reinforcing the first activity in the aural training section of the module.

The three melodies that followed were all simple ones involving a minimal reading skill. Not all the notes were fingered so that subjects would learn to read the notes rather than simply follow the fingering. A deliberate attempt was made to provide opportunities to play in both simple triple and simple quadruple time.

Activity Four/Theory Check Point One

The Theory Check Point One was a short test based on the theory of music required for Module One. The test was not included in the Module One booklet.⁹³ The subjects completed the test during the class time. The test results were marked and returned during the delivery of Module Two.

Activity Five/Extension

93

All the tests are included in the task sheets. Appendices V. p.292-298.

This section of the Module provided two further examples of melodies of the same level of difficulty as already encountered in the Activity Three.

Module Two (Green)

Objectives

At the end of Module Two subjects will be able to

- demonstrate a knowledge of basic theory;
- demonstrate the ability to perform a piece of music reading both clefs and using both hands;
- display an ability to sight read simple music, treble clef;
- demonstrate an ability to play back patterns of music using two notes a tone apart.

Time management structure

- Activity One/Revision (10')
- Activity Two/Ear training (5')
- Activity Three/Sight reading(5')
- Activity Four/Theory(10')
- Activity Five/Playing melodies (10')
- Activity Six/Theory Check Point (10')
- Activity Seven/Extension

Activity One/Revision

Subjects revised the three melodies from Module One Activity Three.

Activity Two/Ear Training

Two bar rhythms using three notes only were played. There were five examples, each one was repeated. After the second hearing, the subjects repeated the rhythm. The notes used were from Middle C and D. The objective of this exercise was to develop aural skills in the area of rhythmic awareness as well as using first three fingers of the right hand.

An example is included below



In the second exercise, a series of 5 notes were played using Middle C and D only. The series was then repeated with one note being altered. Subjects were asked to record the changed note by writing a number to indicate which note had been altered. If, for example, the second note was changed a 2 was recorded. The changed notes were always consecutive ones. There were five examples and answers were recorded in the Module Two Task Sheet.



Activity Three/Sight Reading

Two examples were given.⁹⁴ Subjects were asked to read them through and then perform them. Fingering was not included. The notes used, Middle C and D matched those used in Activity Two. Only quarter, half and whole notes were used. Examples were four bars long.

Activity Four/Theory

The Module One Task Sheet was returned. The sheet had been marked.

Activity Five/Playing Melodies

Four melodies were included. Three were for the right hand only, the other "Turn on the Sun" was for both hands. Given the comparative difficulty of "Turn on the Sun", only one example of music using both clefs was included.

Activity Six/Theory Check Point Two

The Theory Check Point Two was a short test based on the theory of music required for Module Two. The subjects completed the test during the class time. The test results were marked and returned during the delivery of Module Three.

⁹⁴ Ref. Appendices IV.p.275-278.

Activity Seven/Extension

This section of the Module provided three further examples of melodies of the same level of difficulty as already encountered in the Activity Five. Melodies were for the right hand only.

Module Three (Red)

At the end of Module Three subjects will be able to

- demonstrate a knowledge of basic theory;
- demonstrate the ability to perform two pieces of music reading both clefs and using both hands;
- display an ability to sight read simple music in both the treble and bass clefs;
- demonstrate an ability to play back patterns of music using three notes a tone apart.

Time management structure

- Activity One/Revision (10')
- Activity Two/Ear training (5')
- Activity Three/Sight reading(5')
- Activity Four/Theory(10')
- Activity Five/Playing melodies (10')
- Activity Six/Theory Check Point (10')
- Activity Seven/Extension

Activity One/Revision

Subjects revised the two melodies from Module Two, Activity Three: "Turn on the Sun" and "Aunt Rhody".

Activity Two/Ear Training

Two bar rhythms using three notes only were played. There were five examples, each one was repeated. After the second hearing, the subjects repeated the rhythm. The notes used were from Middle C, D and E. The objective of this exercise was to develop aural skills in the area of rhythmic awareness as well as using first three fingers of the right hand.

An example is included below



In the second exercise, a series of 5 notes were played using Middle C, D and E only. The series was then repeated with two notes being altered. Subjects were asked to record the changed note by writing a numbers to indicate which note had been altered. If, for example, the second note and third notes was changed a 2,3 was recorded. There were five examples and answers were recorded in the Module Three Task Sheet.



Activity Three/Sight Reading

Two examples were given⁹⁵. One example was written for the right hand only and one for the left hand only. Subjects were asked to read them through and then perform them. Fingering was not included. The notes used, Middle C, D and E matched those used in Activity Two. Only quarter, half and whole notes were used. Examples were four bars long.

Activity Four/Theory

The Module Two Task Sheet was returned. The sheet had been marked.

The quarter note (crotchet) and whole note(semi-breve) rests was introduced and two examples were given using the quarter note rest. They served a double purpose, to provide examples of how the rests are written and also two further examples of music to perform (one for each hand) thus further reinforcing Activity Three. The whole note rest was used later in the module in the Module Three Task Sheet.

Activity Five/Playing Melodies

Two melodies were included. Three were for both hands. "Aunt Rhody" used the left hand throughout. The subjects had already learned to play the melody of "Aunt Rhody" in Module One. "The Grand Old Duke of York" also used both hands but this time, the hands were not played at the same time. This was a deliberate ploy to show subjects a piece of music using both hands that was more simple to play than

⁹⁵ Ref. p.280-283.

"Turn on the Sun" and would result in a quicker and more satisfactory musical result. It also included the whole bar rest which had been taught as a new concept in Activity Four.

Activity Six/Theory Check Point Three

The Theory Check Point Three was a short test based on the theory of music required for Module Three. The subjects completed the test during the class time. The test results were marked and returned during the delivery of Module Four.

Activity Seven/Extension

This section of the Module provided two further examples of melodies of the same level of difficulty as already encountered in the Activity Five. Melodies were for both hands.

Module Four (Blue)

- At the end of Module Four subjects will be able to
- demonstrate a knowledge of basic theory;
- demonstrate the ability to perform a piece of music involving tied notes, both clefs and using both hands;
- display an ability to sight read simple music in both the treble and bass clefs;
- demonstrate an ability to play back patterns of music using four notes a tone apart.
- display an ability to write music from dictation.

Time management structure

Activity One/Revision (10')

Activity Two/Ear training (5')

Activity Three/Sight reading(5')

Activity Four/Theory(10')

Activity Five/Playing melodies (10')

Activity Six/Theory Check Point (10')

Activity Seven/Extension

Activity One/Revision

Subjects revised the two melodies from Module Three Activity Three, "Aunt Rhody" and "The grand old duke of York".

Activity Two/Ear Training

Two bar rhythms using four notes only were played. There were five examples, each one was repeated. After the second hearing, the subjects repeated the rhythm. The notes used were Middle C, D, E and F. The objective of this exercise was to develop aural skills in the area of rhythmic awareness as well as using first four fingers of the right hand.

An example is included below



Two short rhythms were played and subjects wrote them down. Each example was played twice. The two rhythms were as follows.

First example



Second example



Activity Three/Sight Reading

Two examples were given.⁹⁶ One example was written for the right hand only and one for both hands. Subjects were asked to read the pieces through and then perform them. Fingering was not included. The notes used, Middle C, D, E and F were used matching those used in Activity Two. Only quarter, half and whole notes were used. Examples were four bars long.

Activity Four/Theory

The Module Three Task Sheet was returned. The sheet had been marked.

Tied notes were introduced and two examples were given in the booklet.

Four further examples were written on the whiteboard, they were played using Middle C only. They were performed before the examples in the booklet, an example is included below.



Activity Five/Playing Melodies

One melody only was included in this section of the Module Four. In the experience of the author, tied notes can cause problems especially as far as the overall length of the notes are concerned.

The arrangement of "The Saints" used both hands and incorporated left hand work where the notes sometimes were played either the same time as the notes in the right hand or at the same time. This represented an advance upon previous pieces performed in the field trial programme which only used one of these skills in any one piece. The half note (minim) rest was used for the first time in this piece and was explained to the subjects.

Activity Six/Theory Check Point Four

The Theory Check Point Three was a short test based on the theory of music required for Module Four. The subjects completed the test during the class time. The test results were marked and returned during the delivery of Module Five.

Activity Seven/Extension

This section of the Module provided a further example of a melody of the same level of difficulty as already encountered in the Activity Five. The piece, "The Banks of the Ohio" contained a number of tied notes. The left hand part, however, was not played at the same points in the music as the right hand part.

Module Five (Orange)

At the end of Module Five subjects will be able to

- demonstrate a knowledge of basic theory;
- demonstrate the ability to perform a piece of music involving dotted quarter notes;
- display an ability to sight read simple music in both the treble and bass clefs;
- demonstrate an ability to play back patterns of music using five notes a tone apart;
- display an ability to write music from dictation.

Time management structure

- Activity One/Revision (10')
- Activity Two/Ear training (5')
- Activity Three/Sight reading(5')
- Activity Four/Theory(10')
- Activity Five/Playing melodies (5')

Activity Six/Theory Check Point (10')

Activity Seven/Extension

A further revision of "Turn on the Sun" and "The grand old duke of York" if required for test.

Activity One/Revision

Subjects revised the three melodies; from Module Two "Turn on the Sun", from Module Three "The Grand Old Duke of York" and from Module Four, "The Saints". The first two pieces were to be performed in a practical test at the end of the field trial.

Activity Two/Ear Training

Two bar rhythms using five notes were played. There were five examples, each one was repeated. After the second hearing, the subjects repeated the rhythm. The notes used were Middle C, D, E, F and G. The objective of this exercise was to develop aural skills in the area of rhythmic awareness as well as using first four fingers of the right hand. The examples followed a stepwise pattern.

An example is included below



Two short rhythms were played and subjects wrote them down in their Module Five Task Sheet. These dictations were assessed as a part of the written test. Each example was played twice. The two rhythms were as follows.

First example



Second example



Activity Three/Sight Reading

Two examples were given (ref. Module Five booklet). Both examples were written for the right hand only. Subjects were asked to read the pieces through and then perform them. Fingering was not included. The notes used, Middle C, D, E, F and G were used matching those used in Activity Two. Only quarter, half and whole notes were used. Examples were four bars long.

Activity Four/Theory

The Module Four Task Sheet was returned. The sheet had been marked.

Dotted quarter notes were introduced and an example given in the booklet.

Activity Five/Playing Melodies

One melody only was included in this section of the Module Four. In the experience of the author, tied notes can cause problems as far as the overall length of the notes are concerned.

Four further examples were written on the whiteboard, they were played using Middle C only. They were performed before the examples in the booklet

Activity Five/Playing Melodies

One melody only was included in this section of the Module Five. Beethoven's "Ode to Joy" contained a number of dotted quarter notes. This was the longest piece of music in the total programme and required a sustained and accurate effort to ensure an overall satisfactory musical result. Phrase marks were included and explained to the subjects, A legato performance was required with clear endings to the phrases. A true legato is hard to achieve on an electronic keyboard. Enoch notes that an electronic keyboard requires a different touch to the piano to achieve the same effects.⁹⁷

The left hand part was basically a chordal one requiring quick changes in bars 8 and 16.

Activity Seven/Extension

This section of the Module provided a further example of a melody of the same level of difficulty as already encountered in the Activity Five. The piece, "Waltz" required a smooth, legato style of performance. The left hand part, however, was not played at the same points in the music as the right hand part as was the case in 'Ode to Joy'.

⁹⁷ Enoch Yvonne (1993) p 12-13.

The "Waltz" provided subjects with another opportunity to play a piece of music in simple triple time.

A further revision of the two pieces for the practical test for the following week was required.

The arrangement and composition of songs and pieces used in the five modules which made up the field trial programme.

All the arrangements of melodies in the field trial were done by the author.

These arrangements were included in the programme to provide a body of music that was not known to the subjects. It was intended that these pieces would have forced the subjects to rely on their reading skills, given the fact that the melodies of a number of the other items would have been well known to them. In addition, a number of short pieces were composed by the author for this programme.

Module One

"Opus One"

"Waltz"

"Happy Days"

Module Two

"Swing Along"

"March"

Module Three

"Trumpets"

Module Five

"Waltz"

The Field Trial Programme

The programme

All Second Year primary school trainee students at the Christchurch College of Education are required to take a teaching study course in music. This course is essentially a continuation of a similar course taken by First Year students.

The second year course is 24 hours long and is held once a week over a twelve week period. The weekly sessions each last for two hours. The first hour is spent in studying classroom programmes, materials and methodology. The second hour is devoted to the study of an instrument that would be of use in implementing a classroom music programme. Course members are given a choice between learning to play the guitar or the keyboard.

The field trial programme was written for Second Year students entering the keyboard course as beginner or near beginners on keyboard instruments. Students who already had a background in playing the keyboard were taught at a different time in the week using a more advanced programme. The twelve week keyboard course is split into two blocks of six weeks each with a gap of eight weeks between each block. Because of this division into two widely separated periods

of time, it was decided that the field trial programme would be conducted in the first six week block of the programme.

The allocated six week period set aside for the field trial programme was divided into two parts. The first five weeks were spent in working through an ongoing set of five modules whilst the sixth week was designated as the time when practical keyboard tests would be undertaken by the the course members.

The Subjects

36 subjects were involved in the field trial programme. They were divided into two groups of equal size.

There were 5 males and 31 females in the field trial programme. There were 3 males and 15 females in the Control Group and 2 males and 16 females in the Experimental Group.

24 subjects were students who were taking a short, two year training course, this group had, for the most part, completed a university degree or already held other qualifications. 12 subjects were taking the three year course of training.

All 18 members of the Control Group came from the short course group. 6 members of the Experimental Group came from the short course group and 12 came from the three year course group.

Subjects from the short course group tended to be slightly older than members of the three year course group by 4.5 years.

Both groups were presented with an identical programme. The Experimental Group worked in pairs and learned to play the keyboard using a cooperative mode of learning. The second group, the Control Group, was taught in a tutor directed mode of learning.

The selection of the Control and Experimental Groups

The Christchurch College of Education, Primary Programmes, operates on a system where students are placed in tutor groups. For the first two years of training, tutor groups rotate round the various curriculum courses offered. The field trial programme operated in the second Semester (ie. the second half) of 1993 and was a part of the Year Two music curriculum course.

Three second year tutor groups were scheduled to take the second year music course for the second Semester of 1993; 92A, 92E and 92F (92 refers to the year of entry to the Christchurch College of Education). The author had met with each of these three tutor groups prior the music course and explained the contents of the course outlines as well as the field trial programme for beginner keyboard performers. Subjects were then asked to select an instrumental option (guitar or keyboard). This was done so that the instrumental option could start on the first week of the course.

The criteria for entry to the beginner keyboard class was that subjects should have had no previous experience in playing the keyboard or such limited experience that they needed to start from the beginning again. On the data collected from the questionnaire that the

subjects completed at the end of the field trial programme, it was clear that a few subjects fell into this second category.⁹⁸ The subjects who wished to take part in the beginner keyboard programme were initially not told which group (the Experimental or Control Group) they were going to be placed in.

The following numbers of subjects who elected to take part in the beginner keyboard programme were; 92A 12, 92E 18 and 92F 6 making a total of 36. Several more from each group opted for the advanced keyboard course, there was a small group of subjects (7) whose keyboard ability appeared to be only marginally better than those who opted for the beginner class. This group was given a different keyboard programme and was not involved in the field trial.

The college time table made it impossible to mix subjects from different tutor groups in the same classes. Also, the complex nature of the cooperative learning keyboard programme prevented a mixture of subjects involved in two different learning modes in the same class. Therefore it was decided to create four keyboard classes altogether from the three tutor group (with subjects from one tutor group, 92E, being divided into two classes) in order to equalize sizes of groups across the two learning programmes (ie the Control and Experimental programmes).

The maximum size of the group also had to relate to the number of available keyboards in the keyboard laboratory (12). A survey carried out by the author into keyboard laboratories in all the 6 New Zealand

⁹⁸ Ref.p.149-160.

Colleges of Education (1993) indicates that the average size for keyboard classes was 12.6.⁹⁹

One group was made up of 92A and 92F subjects, the other group was made up of 92E subjects. Each group was split into two classes, and each group contained one class of 6 subjects and one of 12 subjects. The ideal arrangement would have been 4 classes, each with 9 subjects. However, for timetabling reasons, this was not possible. The above solution seemed to provide the best possible alternative in the circumstances.

The 92E group who formed the Control Group was split into two classes. This was done on a voluntary basis. One class was held at the scheduled time (the larger group) and the second class was held during a lunch hour.

The question of which group was to be the Control Group and which was to be the Experimental Group was a random one and came down to the toss of a coin. The 92A and 92F groups formed the Experimental Group and the 92E group formed the Control Group. The Control Group appeared to have a slightly better musical background than the Experimental Group.¹⁰⁰

⁹⁹
¹⁰⁰

Ref. p. 245.

Ref. p 149-161

The selection of pairs for the cooperative learning programme

Members of the Experimental Group were asked to select their own partner for the field trial keyboard programme.¹⁰¹ This ensured that there was compatibility in terms of personality between the pairs. A poor pairing could impede the progress of a cooperative learning programme which requires that members of the individual groups (in this case, pairs) work closely together during the programme achieving a high degree of interdependence ¹⁰². This system appeared to work well as there was little or no observable friction between pairs during the programme.

The problem of pairing people of different musical ability was not a major one and although small differences did exist in terms of musical background between partners, the common factor was that all members of the Experimental Group were beginners or near beginners in terms of keyboarding skills.

There were 3 pairs of 2 in the 92F Experimental Group and 6 pairs of 2 in the 92E Experimental Group.

¹⁰¹ There are a number of different ways in which groups can be constituted. The author noted that in some studies, the facilitator used criteria such as mixed ability groupings, gender groupings etc. Johnson and Johnson (1991) discuss the various possibilities. p.64

¹⁰² Ibid. p. 60

The Field Trial Programme

The Cooperative Learning Programme

The cooperative learning programme was undertaken by the Experimental Group over a 5 week period. Week one involved peer teaching between pairs of subjects. The programme for weeks 2 to 5 was a cooperative one.

Throughout the programme the subjects worked closely with each other and also with the author. There were many opportunities for questions to be asked of the author (who was also the tutor). The author saw his role very much as a facilitator or guide throughout the field trial. Eastlund proposed that a greater understanding of content would result from interaction between the subjects, the content and the learners with the teacher in the role of guide.¹⁰³ The author was also aware that many of the subjects were interested in the cooperative learning model as a possible learning style that they could adopt in their own classrooms and at various points in the programme specifically referred to how parts of the programme could be used in the classroom.¹⁰⁴

In the first lesson, partners worked closely together and pooled their combined knowledge in all the activities that made up Module One (apart from activities which involved them with their task sheet). This, as it were, set the stage for the following four modules when each partner became the 'teacher' in alternate modules.

¹⁰³ Eastlund J.(1990) Site based management as a tool for reform. p. 25.

¹⁰⁴ "As a cooperating teacher you should orient the student teacher to the teaching situation, facilitate the teacher's assimilation to the classroom," Smith J. (1992), p 25

9 pairs of subjects were involved in the field trial programme. 6 pairs came from the 92A tutor group and made up one class and 3 pairs came from the 92F tutor group and made up the second class.

Subjects in the cooperative learning programme worked in pairs. This seemed to be the most practical solution as to the desirable size for a group working in a keyboard laboratory. The keyboard laboratory used for the cooperative learning programme contained 12 keyboards which were arranged in pairs. The keyboards contained earphones so that subjects were able to work independently of each other if they wished to. Subjects needed to communicate with each other at several points in the programme. When this was necessary, headphones were removed and if the keyboards were required, the volume was kept at a low level so that other groups in the laboratory were not disturbed. This system appeared to work very well. The author had found, from his own experience, that better results were obtained in keyboard laboratories when headphones were used sparingly.

When pairing is used in a cooperative learning programme, it is particularly important that subjects are as compatible as possible with each other. To ask two subjects to work together and assume that positive interaction will automatically take place would be a mistake. Johnson and Johnson noted that "a cooperative goal structure leads to a promotive interaction between students".¹⁰⁵ At the start of the field trial programme, subjects were briefed as to what the objectives of the course were. These were

to demonstrate an ability to perform a repertoire of songs suitable for the primary classroom on the keyboard:

to demonstrate an understanding of the theory of music to a level that matches the ability of subjects to perform a repertoire of pieces on the keyboard.

Subjects in the Experimental Group clearly understood that to achieve these objectives, it was critical that each member of the group would have to make a positive contribution. Each group was made up of two subjects. Clearly the degree of dependence would have to be very high and probably more so than had the groups been larger. Research conducted by Fraser et al. appeared to suggest that groups of two seemed to be particularly appropriate for adult learners.¹⁰⁶ Johnson and Johnson note that a small grouping does have its advantages too, "within a pair students have to manage (only) two interactions".¹⁰⁷

Subjects entered the field trial with no or very little background in playing the keyboard and in the vast majority of cases, a very slight understanding of the theory of music. They therefore started from nearly the same point. It was interesting to note that when, at the completion of the course, subjects were asked to comment on problems that might have arisen from a cooperative learning programme, one that was raised was "the possibility of partners not being of the same ability"¹⁰⁸. The important point being that this situation was not perceived as having happened to them personally in the field trial. The author was

¹⁰⁶ Fraser, S.C. et al. (1977) p.101-108.

¹⁰⁷ Johnson D.W., Johnson R.T. and Hulobec E.J.. (1990). p 23.

¹⁰⁸ Ref. p. 199.

also aware that although generally partners had reasonably similar musical backgrounds that each member of the pair was also unique and had to be recognised as an individual with their own perspective of what they hoped to achieve from the course.¹⁰⁹

Personal independence was another important aspect of the programme; that each partner would bring something to the programme that was essential for the overall success of the programme. "The first requirement for an effectively structured cooperative lesson is that students believe that they sink or swim together."¹¹⁰

The cooperative programme followed the following pattern for Modules Two, Three Four and Five. At the start of each lesson, one of the pair (the teacher) met with the author and was given the appropriate Module booklet.¹¹¹ The author then briefed the 'teachers' on the contents of the Module as a whole and, in particular, concentrated on the specific area (or areas) which was to be taught in turn to the partner.

The "teacher" was given the appropriate information, and then received another Module booklet for the partner. This booklet had the areas blacked out which contained information relating to the specific area(s) of learning to be taught. The 'teacher' was also given a teaching card. The card contained the information that had been deleted from the partner's booklet. In addition the teaching card contained supplementary information required for the 'teacher' to brief their partner. The same supplementary information was also used by the author when he tutored the Control Group. The author put this

¹⁰⁹ De Nardi G. and O'Hearn R. (1992) p. 22-25.

¹¹⁰ Johnson D.W. and Johnson R.T. (1991). p.55.

¹¹¹ Ref p. 270-293.

information on a whiteboard placed at the front of the keyboard laboratory.

In the following lesson the roles were reversed and the teacher in the previous module became the one being taught thus creating a type of jigsaw effect in the learning pattern for the group. At the end of Module Five, both partners had therefore two opportunities to be both the teacher and pupil.

Module One followed a different pattern. Both partners were briefed by the tutor at the start of the lesson and shared the teaching activities in an unstructured way. This was done so that partners had an opportunity to work with each other in an informal way and to become used to each other as partners in the programme. This situation still provided opportunities for cooperative learning if not in the more structured way used in following four modules. The pair decided who was to be the first 'teacher' for Module Two.

Subjects entered the programme with a similar base of skills and understandings. Given this situation, skills that were brought into the programme would be new to both partners. Therefore, if one of the partners were introduced to a new skill or understanding by the tutor, it would follow that for the other partner to succeed, it would be necessary that accurate briefing would have to take place not only between the tutor (the author) and the partner who was briefed but also, and equally important, between partner (as the teacher) and partner (as the one being taught). Data collected from the questionnaire

completed by the students, indicated that they felt that the level of communication, at both these stages, was very good.¹¹²

The briefing took 10 minutes before the Module was delivered. The length of time for the delivery of the Module was 50 minutes (the same as for the Control Group).

The 'teacher' then briefed his/her partner just before the performance section of the module. The briefing lasted for 5 minutes. It was most important that the briefing did not exceed 5 minutes.. Had a longer time been made available, it would have been difficult for the subjects to have completed the module. The briefing also included identifying the overall objectives for the module, bearing in mind that cooperative learning was a feature of virtually all of the module.

The pairs in the Experimental group were actively encouraged to assist each other at all stages of the module except where they were required to work from their task sheets.

At the conclusion of the module they were also encouraged to go through a form of debriefing to insure that the objectives for the module had been met. Informal debriefing also occurred during the lessons at those points where it was considered to be appropriate by subjects.¹¹³

At all stages of consultation between the pairs, the author was able to contribute to the process if asked specifically to do so, or, if he perceived that there were serious misunderstandings regarding the

¹¹² Ref p 194-195.

¹¹³ Johnson D.W. and Johnson R.T.(1991) p. 149.

materials being taught being relayed from the 'teacher' to his/her partner.

The specific teaching points relating to each module were as follows. The specific areas of learning for each module are given first, followed by information relating to the briefing support and teaching materials used.

Module One involved both of the subjects in a shared peer teaching situation. Both partners were briefed at the start of this module. One partner only was briefed at the start of Modules Two, Three, Four and Five which used a cooperative style of learning.

Specific areas of learning

Module One

Revision of simple reading skills including a knowledge of the treble clef, simple triple and simple quadruple time.

Module Two

The bass clef

Performing a piece of music using both clefs and both hands ("Turn on the Sun").

Module Three

Rests (quarter and whole note rests)

Performing a piece of music incorporating rests ("The grand old duke of York").

Module Four

Tied notes

Performing a piece of music using tied notes ("The Saints").

Module Five

Dotted quarter notes.

Performing a piece of music using dotted quarter notes ("Ode to Joy").

Support and briefing materials used

Module One

Contents

Treble clef, simple triple and quadruple time, quarter, whole and half notes.

Briefing details

Whiteboard used to reinforce learning areas of module. Areas covered, bars in triple and quadruple time.

Module Two

Contents

Bass clef diagram showing position of bass clef relative to the treble clef.

Briefing details

Fingering for left hand relative to both the keyboard and the required notes in the bass clef (C and G).

Tutor taught the 'teacher' "Turn on the sun"

Teacher' to take partner through "Turn on the sun"

The new concept of reading both clefs simultaneously.

Module Three

Contents

The quarter(crotchet) and whole note (semibreve) rests.

Bass clef, incorporating rests.

Briefing details

Fingering for left hand relative to both the keyboard and the required notes in the bass clef (C and G).

Tutor taught the 'teacher' "The grand old duke of York".

"Teacher to take partner through "the grand old duke of York" as well as a teaching card containing examples of rests.

Module Four

Contents.

Tied notes.

Briefing detail

A teaching card including several examples of tied notes.

Tutor taught "The Saints" to the 'teacher'.

"Teacher" to take partner through examples as well as through the set piece, "The Saints"

Module Five

Contents

Dotted quarter notes

Briefing details. A teaching card including several examples of dotted quarter notes.

Tutor taught "Ode to joy" to the 'teacher'.

"Teacher" to take partner through examples of dotted quarter notes as well as through the set piece, "Ode to Joy".

Outcomes resulting from participation in the cooperative learning programme.

A feeling of support and cooperation came through strongly from the subjects' evaluation of the programme.

When asked to list three advantages (in order of importance) that the subjects saw in learning to play a keyboard in a cooperative learning mode, the responses from subjects from the Experimental Group placed "Mutual support and encouragement" at the top followed by "Positive and non-threatening atmosphere" and with "Two supporting teachers" a

distant third. These responses were not selected from a list of possible answers and were the subjects own, individual answers.

These responses lay very close to what Johnson and Johnson state. "To encourage a positive and effective learning environment and to promote the achievement and socialization outcomes of schools, we must realize that cooperation is the forest-competition and individualization are but trees."¹¹⁴

An interesting outcome was that when subjects were asked if they would use a cooperative learning programme in their own classroom to teach musical instruments, the response was very positive. When pressed further as to how often they would use this learning mode, most subjects indicated that they would use it fairly frequently.¹¹⁵ This was a very gratifying result for the author who believes that if teachers are to adopt new teaching strategies, it is important that, if possible, they are able to experience it themselves at first hand.

The author as a role model

The author was very aware that the subjects in the cooperative learning programme would have been particularly interested in his personal direction of the course. He attempted to adopt the role of a provider and a facilitator. Johnson and Johnson saw the teacher as a monitor who checked on the functioning of the learning groups, intervening and offering assistance when it appeared that it was necessary to do so.¹¹⁶

¹¹⁴ Ibid. p. 55.

¹¹⁵ Ref. p.200.

¹¹⁶ Johnson D.W. and Johnson R.T. (1990) p. 61

The subjects were familiar with the concept of cooperative learning but for virtually all of them, the field trial programme would have been the first time that they had experienced cooperative learning as actual participants.

There was one exception, a subject who had taken part in a cooperative programme involving the writing and production of an operetta for children. This project was carried out in 1992 as a part of a Christchurch College of Education music course in the composition of music and directed by the author. The subject had been an enthusiastic participant.

The author believes in the value of positive reinforcement and used this teaching strategy reasonably frequently during the field trial. He noted that the subjects responded to encouragement.¹¹⁷ Susan O'Neill notes that musically gifted children "rated their teachers very highly on a 'warmth' dimension such as friendly, encouraging and nice." She then surmised that "it may be much more important for music teachers to be effective at encouraging and motivating children than for him or her to display impressive musical abilities."¹¹⁸ The importance of pupils perceiving their teacher as belonging to a similar world to their own is raised by Goodlad.¹¹⁹

The subjects completed a questionnaire at the end of the field trial. Question 7 asked them to comment on the delivery of the course. All of

¹¹⁷ O'Connor J. (1992) p. 24.

¹¹⁸ O'Neill S. (1993) p. 24.

¹¹⁹ Goodlad S. (1979) p. 58.

the Experimental Group recorded a 5 rating (very effective) and all but two of the Control Group also recorded 5s. The other two subjects gave the course a 4 rating. The final question asked them to add their own comments. These comments were, of course, unsolicited. 18 subjects (8 from the Control Group and 10 from the Experimental Group) commented very positively about the quality of the tutoring.¹²⁰

CHAPTER FOUR

The Field Trial Programme

Data resulting from the field trial programme (during the programme)

36 subjects took part in the field trial programme with equal numbers in both the Experimental and Control groups. The author was concerned that numbers were evenly balanced. The number of subjects in the study was not large. However the author noted that another study he researched on cooperative learning contained a similar number of subjects and numbers were not as evenly balanced between the two groups.¹²¹

There were 31 females and 5 males in the programme. This ratio was representative of the Christchurch College of Education primary programmes students as a whole. The majority of the subjects (28) were in the 18-25 age group.

Data was collected and processed from all five modules used during the programme. After the completion of the Module Five, a practical test was conducted and was also assessed.

Data from Module Five and the final practical test was assessed by an independent assessor. The Module Five test stood apart from the other four module tests in that subjects were required to apply their reading skills by relating them to a piece of music using both the treble and bass clefs (something they had not been asked to do before). The second question required them to insert barlines into an unbarred piece

121

Fraser et al. (1977) p 101-108.

of music. The overall level of difficulty was thus higher than for the other four modules.

Data was collected from two areas of the five Modules; from the sections concerned with ear training and from the section concerned with the theory of music.

Each module had an associated Task Sheet which was completed by the subjects during the classes. The Task Sheets covered the areas of ear training and the theory of music. The Task Sheets were then collected by the author who marked them after the class was over. The Task Sheet was then returned to the subjects during the next class. The subjects checked over corrections and returned the sheets to the author who then filed them.

The Task Sheets were marked with a tick if the answer was correct and in the case of an incorrect answer, an explanation was given as to where the error(s) had been made. The subjects were certainly very aware of how they had achieved in their task sheets in terms of correct answers and also why errors had been made. Actual marks were not given to the subjects.

The author was conscious of bringing any variables into the programme which might have affected the smooth running of the programme. The system of marking used for the purposes of data collection was reasonably complex and it was felt that ongoing (weekly) explanations of the marking system to the subjects would not have been helpful to the field trial as a whole. Both the students and the

supervisor were aware of this situation which was agreed upon at the start of the programme.

The author also believed in the use of positive reinforcement (within reasonable limits) and particularly with subjects who have a minimal background in music and often felt most insecure in the early stages of acquiring new and unfamiliar skills. A poor mark could have had an adverse affect on a subject and especially in the early stages of the programme. It must be stressed that the subjects who took part in the field trial generally had a very limited musical background.¹²²

The field trial keyboard programme represented only the first part of the keyboard course. Grades and marks were awarded to students as a result of their final achievement in the course as a whole and were based on both practical performance and knowledge of the theory of music at the point at which they arrived on the completion of the course. Subjects were kept in touch with their progress during the course and clearly defined criteria were provided as to how grades were awarded.¹²³

Subjects were very pleased with the feed back they received during the field trial programme as can be seen in their comments on the quality and the delivery of the course in the questionnaire).¹²⁴ They did not appear to be concerned with the fact that they did not receive marks as such during the field trial. They appeared to be more interested in their own (or their partner's) progress relative to the feed-

¹²² Ref. p.149-160.

¹²³ The field trial represented only the first part of the keyboard course for the subjects. The course continued for a further six weeks and final course grades were given to the subjects based on their performance over the complete course.

¹²⁴ Ref. p.181-182.

back they received in other forms such as positive reinforcement. Kagan posed a very interesting philosophic question when he asked if rewards (for example, marks) actually eroded intrinsic motivation.¹²⁵ The author believed that the absence of marks or grades made a positive contribution to the course and eliminated undesirable form of competition between the subjects. Research by Johnson and others revealed many undesirable features in competition between learners.¹²⁶

Very few absences were recorded during the field trial programme. There were only 6 absences over the first five weeks of the programme and with 2 exceptions, (one from Control Group and one from the Experimental Group) which applied to Module Five (the Cooperative Group), subjects were able to catch up. This small number of absences represented only 3.33% of the total number of possible attendances. Given the fact that the field trial programme was run during the winter term, the attendance percentage was very good. The problem of possible absences had been anticipated before the field trial programme commenced. A special time was set aside at a lunch hour when the module could be delivered again.

When a member of the Experimental Group was absent, as happened on two occasions, the teaching partner did not attend the class, but then sat the Module at the rescheduled time along with the subject who had been absent at the original scheduled time. This solution allowed for the cooperative teaching model to continue for the subjects concerned; they were then able to slip back into the programme when the next module was scheduled.

125

Kagan S. (1990). 16:8.

126

Johnson W.D., Johnson T.R. and Johnson Holubec E. (1990) p 3.

One subject from the Experimental Group was absent for the final module. The above system was applied, but unfortunately a time constraint meant that it was not possible for that subject to complete the theory part of the final test. The subject's partner had completed the test at an earlier stage. The result from the uncompleted part of the test (the theory of music) has not been included in the sum of the raw scores for Module Five, Theory of Music and the result for this module was obtained by dividing the raw score by 17.¹²⁷ The result from the completed part of the test (ear training) was included. This was done in this particular way because independent data was collected from both parts of the test.

The other areas of the programme, sight reading and performance skills, were monitored closely by the author. It did not appear that very reliable data could be obtained from these areas given the number of pieces that would have had to be assessed. Also, variables would have inevitably appeared in any situation where one subject had more time to learn a piece of music than others. This would certainly have been the case if the author, for example, had attempted to assess all performances given by a number of subjects within the context of a fifty minute lesson. The assessment of an instrumental performance has to be an individual exercise whereas the delivery of ear tests or of a test on the theory of music can be given to all the group at the same time so eliminating the variables that would otherwise have occurred with the assessment of individual performances.

127

There were 18 subjects in the Experimental Group.

The author, as stated, did monitor the performance skills of all the subjects. He used a system involving a mark (a 10 point scale was used with 10 as the highest grade). The data collected is referred to but should be seen only as indicating a general, rather than a specific level of achievement. At the conclusion of the field trial programme, subjects were tested on their ability to perform two pieces of music under conditions which were much more reliable in terms of the validity of the data involved. This data was analysed in a separate part of the report on the field trial programme (ref. Data resulting from the field trial programme on the completion of the programme).¹²⁸

The results of the data collected from the four Task Sheets relating to each module are presented in the following form; a heading, a table and then the results of the findings with some added comments. The data used in this section of the report was only that concerned with the theory of music and ear tests (Aural training). For reasons already given, data referring to the performance aspects of the programme was considered in a separate section.¹²⁹ The data is expressed as a percentage because the total for each test was not always the same. The author compared results between groups by using a mean (average) only, he did not use standard deviations. Given the small number of subjects involved in the field trial programme, this seemed to be the best way of expressing results from data collected from the field trial.

Data relating to the theory of music tests from the first four modules is presented first followed by data relating to the ear tests (or aural training section of the field trial programme).

¹²⁸

Ref. p.109.

¹²⁹

Ref. p.114-126.

Data relating to the theory of music tests from Modules One, Two, Three and Four.

Table 1

Module One (Task Sheet One)

Mean of scores

Control Group	Experimental Group
97.19%	98.25%

Responses from all 36 subjects

The possible total was 16; marks were converted into a percentile. Both groups scored very highly with the Experimental Group slightly ahead (1.06%).

This result was not unexpected as the material tested was already reasonably well known to the subjects.

The Experimental group pairs were allowed to consult with each other in general terms only about the theory section in the module prior to the test. They worked independently during the test.

Table 2

Module Two (Task Sheet Two)

Mean of scores

Control Group	Experimental Group
91.85%	95.37%

Responses from all 36 subjects

The possible mark was 30; marks were converted into a percentage.

Both groups scored highly with the Experimental Group ahead (3.52%).

The gap between the groups had increased by 2.46%

The Experimental Group pairs were allowed to consult with each other in general terms only about the theory section in the module prior to the test. They worked independently during the test.

Table 3

Module Three (Task Sheet Three)

Mean of scores

Control Group	Experimental Group
88.19%	88.04%

Responses from all 36 subjects

A very close result with the Control Group very slightly ahead
(.15%)

The Experimental group pairs were allowed to consult with each other in general terms only about the theory section in the module prior to the test. They worked independently during the test.

*Table 4***Module Four** (Task Sheet Four)

Mean of scores

Control Group	Experimental Group
92.35%	94.41%

Response from 36 subjects

The Experimental Group scored higher than the Control Group (2.6%)

The Experimental group pairs were allowed to consult with each other in general terms only about the theory section in the module prior to the test. They worked independently during the test.

Results from all four modules indicated that both groups performed very well.

The Experimental Group had an overall average of 94.01%. The Control Group had an overall average of 92.36%.

The Experimental Group had a better overall average of 1.65%.

The Experimental Group scored at a slightly higher level than the Control Group in all modules with the exception of Module Three.

It was of interest to note that the Experimental Group performed at a slightly higher level than did the Control Group. The Control Group had a superior musical background on entry to the field trial programme in terms of subjects who indicated that they were able to read music already.¹³⁰ It is worth noting that the course was designed for beginners in terms of keyboard skills although some of the subjects were not total beginners in terms of music reading skills.

The overall high level of performance from both groups in their understanding of the theory of music was also most important for the success of the field trial programme as a whole. A strong emphasis was placed on the ability of subjects to be able to read music without having to rely too much on fingering. Each module contained a section where subjects were asked to sight read an unprepared and unfingered piece of music. An ability to both identify notes and their relative position on the keyboard was critical for success in this area.

Data relating to the ear tests in Modules One, Two, Three and Four.

Ear training was an important feature of the field trial programme. The author believed that this aspect of musicianship skills is often overlooked in programmes concerned with teaching subjects to play a musical instrument.

Each Module contained a section concerned with ear training. These can be identified in the Module booklets under the heading "Ear Training". They are placed as the first activity in Module One and as the second activity in Modules Two, Three, Four and Five.

Ear training activities were structured so that they both supported and reinforced the other activities in the Modules. For example, in Module Two, ear tests concentrated on the notes Middle C and D as did sight reading exercises. More information on the relationship between the ear training section and other sections of the modules will be found in the general description of the field trial programme.

Where subjects were asked to repeat exercises in the ear training programme, they did so as a group. In supporting the rationale for this mode of delivery the following example from Module One is given.

Five short patterns of notes were played twice using Middle C and D. After the second hearing subjects played them back as a group. It would have been both inappropriate and impractical to have directed each example to the individual members of the group. Many members of both groups were not confident in their musical ability. Had they been asked to perform as individuals they would almost certainly have

found the experience to be a most stressful one. This, in turn, could easily have affected their performance in the rest of the programme.

Also, had a system of repeating the same exercise for each member in the group been adopted, a marked advantage could have been given to those subjects at the end of the list who would have heard the pattern of notes many more times than had those at the beginning.

A third reason was that an individualised system would have been very time consuming. The author believed it is entirely appropriate to deliver aspects of an ear training programme to the group as a whole.

The author monitored the exercise carefully noting when a mistake had been made by a subject (or subjects) in the group. Where a subject appeared to have ongoing difficulties with ear training, as was the case with a member of the Experimental Group, the author worked with that person outside the time allocated for the programme.

The author had previous experience working with groups in the area of ear training and was well aware when a mistake had been made by a member of the group. He often used positive reinforcement to correct individuals who had made mistakes. For example in Module One, one subject from the Control Group did not start on the correct note but still played the pattern of sounds rhythmically correctly. All that was required was a reminder of the correct starting point when the exercise was repeated as well as a comment on the rhythmic accuracy of the first attempt! Members of the Experimental Group were encouraged to assist each other throughout the ear training programme.

The author noted that there were some subjects who had found ear training difficult.

Subjects used the appropriate module task sheet to record their answers in the areas of the ear training programme that required a written response. However, some areas could not be recorded in the task sheets, for example, where subjects were asked to play back rhythms or melodies.

An actual description of the contents of the ear training programme is given in the section of the report concerned with the description of the programme.¹³¹

Results from the ear training Task Sheets are as follows.

Table 5

Module One (Task Sheet One)

Five patterns of notes were played twice. The second pattern was either the same as the first or contained a slight change. Subjects recorded an "S" if the patterns were the same or a "D" if they were different. (TS)

Mean of scores

Control Group	Experimental Group
91.11%	88.89%
Responses from all 36 subjects	

The Control Group scored 2.22% higher than the Experimental Group

Table 6

Module Two (Task Sheet Two)

Five patterns of notes were played twice. Each pattern consisted of 5 notes. One note was changed when the pattern was repeated. The subjects recorded a number indicating which note had been changed.

Mean of scores

Control Group	Experimental Group
74.44%	71.11%
Responses from all 36 subjects	

The Control Group scored 2.33% higher than the Experimental Group

Table 7

Module Three (Task Sheet Three)

Five patterns of notes were played twice. Each pattern consisted of 5 notes. Two adjacent notes were changed when the pattern was repeated. The subjects recorded two numbers indicating which notes had been changed.

Mean of responses

Control Group	Experimental Group
77.78%	81.11%
Responses from all 36 subjects	

The Experimental Group scored 3.33% more than the Control Group.

Table 8

Module Four (Task Sheet Four)

Two short rhythms were dictated, each example was played twice and was two bars long.

Mean of scores

Control Group	Experimental Group
84.7%	87.06%
34 responses (17 from each group)	

The Experimental Group scored 2.36% more than the Control Group.

Overall, the the Control Group had an average of 82% over the first four modules. The Experimental Group had an average of 82.04%. The difference between the two groups in terms of overall results, which was obtained by taking the average of the tests relating to the first four modules, was insignificant (.04%).

However, it is interesting to note that in both the first two tests, the Control Group scored more highly than did the Experimental Group. The reverse was the case in the last two tests with the Experimental Group outscoring the Control Group.

The Experimental Group entered the field trial with a higher degree of motivation.¹³² Both groups were briefed about the nature of the field trial prior to the start of the course. The author observed that the Experimental Group was quite competitive in terms of their progress as compared to that of the Control Group despite the fact that the author at no stage of the field trial programme discussed the progress of one group with the other. This competitive characteristic may have had some bearing on the results from the Experimental Group which improved steadily throughout this area of the programme. The Experimental Group also displayed the "Hawthorne Effect", a condition in which subjects try to please the tutor (in this case, the author).¹³³

Another factor may have been that the Control Group entered the field trial with a higher level of musical skills than did the Experimental Group. They may have found the the ear tests in the first two modules did not require them to extend themselves. Module Three contained a harder test and Module Four introduced dictations for the first time. The Control Group may not have applied themselves as well as the Experimental Group in acquiring and applying the new skills required in Modules Three and Four.

Both groups achieved a very good degree of success in all the ear tests that required a written answer.

132

Ref. p.161-162

133

Kalat J.W. (1990) p. 41-42.

The Field Trial Programme

Data resulting from the field trial programme (after the programme)

Assessment of data by the External Assessor

The External Assessor

The external assessor is a senior lecturer in music education at the Christchurch College of Education. He has a wide background in music education and is very highly regarded in his field. He is also a competent pianist. His participation in the field trial programme as the external assessor had been approved by the supervisor of the thesis.

As he was well known to all of the subjects taking part in the field trial, it was most important that at no stage of the field trial programme was he aware of the names of any of the subjects whose work he was assessing.

System used to ensure that the external assessor was not aware of the identity of the subjects.

Students were allocated a number using a random system of selection (out of a "hat" and numbered 1 to 36 in the order in which they appeared). Their names were removed from the top of the Module Five Task Sheet. The numbers were recorded by the author beside the names of the subjects.

The members of both groups were mixed so thoroughly that it would have been quite impossible for the external assessor to have

known which of the two groups they came from (the Control Group or the Experimental Group).

Areas of the field trial programme assessed by the external supervisor

All of the contents from the Module Five Task Sheet were assessed.

There were two sections, one concerned with ear training and the other with the theory of music. The ear training section consisted of two pieces of dictation. The theory of music section required subjects to identify the letter names of notes in a short piece of music written using both the treble and the bass clefs. They were also required to enter the fingering required to perform the piece.

Data from the ear training section

There were two short pieces of dictation. The external assessor had been instructed to award a maximum of 10 marks for each question, giving a combined total of 20 marks.

The Control Group scored a mean of 18.27.

The Experimental Group scored a mean of 18.47.

Expressed as a percentage this translated to

Table 9

Control Group	Experimental Group
91.38%	92.35%
Responses from 35 subjects	

All 18 subjects in the Control Group took part in the test.

17 subjects in the Experimental Group took part in the test.

One subject from the Experimental Group was not able to take part in the test due to sickness.

The Experimental group scored more highly (.97%) than the Control Group.

One subject from the Experimental Group scored a zero mark. The subject had not attempted to answer the question. Had the average of the group been taken without this result, the average of the Experimental Group would have been 19.62 or 98.16%. This would have placed the results from the Experimental Group at 1.35 or 6.78% higher than the Control Group.

The reasons why this one subject did not complete this part of the paper were not known to the author. The subject performed reasonably well in the first four module task sheet questions involving ear training with scores of 3, 3, 5 and 3 out of possible totals of 5.

The results of the external assessor's results from the ear training section of Module 5 were 10% higher than those obtained by the author for the first four modules. However, comparisons here could be misleading as the nature of the questions tested were not the same in both cases.

Data from the theory of music sections

Subjects were given two questions to answer.

The first question required the subjects to enter the names of notes and fingering for a short, two bar piece of music and was worth 10 marks.

The second question required subjects to insert bar lines to two, unbarred pieces of music, each piece was 4 bars long and worth 5 marks.

The total mark for the theory section of the paper was 20.

One mark was deducted from the total for each mistake.

The Control Group scored a mean of 15.72.

The Experimental Group scored a mean of 16.41.

All 18 subjects from the Control group took part in the test.

17 (out of 18) subjects from the Experimental Group took part in the test.

Expressed as a percentage this translated to

Table 10

Control Group	Experimental Group
78.61%	82.05%
Response from 35 subjects	

All 18 subjects from the Control Group took part in the test.

17 out of 18 subjects from the Experimental Group took part in the test.

One subject from the Experimental Group did not take part due to sickness.

The Experimental group scored more highly (3.44%) than the Control Group.

Both groups did not score as highly as during the field trial. However, as has been noted before, comparisons in this area would be misleading given the content of the theory in Module 5 which was harder than in the previous modules .

The difference between the two groups widened (more than doubled) when the data from Module Five (3.44%) was compared with the data received from the first four Modules (1.65%).

Conclusions

The Experimental Group scored better than the Control Group in both the ear training tests and the theory of music tests that were marked by the external assessor although margins in both cases were not great.

The Experimental Group also scored better than the Control Group in both the ear training tests and the theory of music tests that were marked by the author although the margins were very slight.

The Experimental group as a whole was not as well qualified in terms of general musical background (including music reading skills) but was still able to achieve better than the Control Group in the areas of ear tests and the theory of music. There would therefore be some evidence to suggest that the cooperative model of learning, as practised in the field trial programme, was certainly as effective as and probably more effective than the tutor directed programme in the areas of ear training and the theory of music.

Data relating to performance sections from Modules One, Two, Three and Four.

Each module contained an activity which concentrated on performing short pieces of music. This section can be found in the modules under the heading of "Playing/Melodies". The purpose of this section was for the subjects to acquire a repertoire of pieces including a number that could be used in the primary classroom.

The author monitored the progress of individual subjects by giving a mark on the basis of having heard the subject perform a particular piece during the class. This was done informally for reasons which have already been given and the marks awarded only indicated a *general* level of achievement on the part of the subject. The external assessor evaluated the performance of all subjects during the final week of the course.

The criteria used for awarding the marks was as detailed below.

A system of banding was used, two marks shared the same criteria with a small degree of flexibility to allow for a superior performance within the band to receive a higher mark.

10 and 9	a very secure, musical performance;
8 and 7	an overall accurate and musical performance with one minor error allowed with either the rhythm melody.
6 and 5	A minor error allowed with both the rhythm and melody or two minor errors in either of these areas, music should still 'flow'.
4 and 3	Two breaks permitted provided the result was still reasonably musical.
2 and 1	A poor performance .

Grades were awarded on the basis of one performance only, the reason being that there was not generally enough time available to hear

more than one performance. This also applied to the two smaller classes so that there was consistency in the marking system used.

The Extension section contained more repertoire for the keyboard. The Extension section was available only for those subjects who completed the rest of the materials in the other sections of the module. Only a few subjects attempted this area, marks were given. The Extension results will be considered after those concerned with the Playing /Melodies activities have been evaluated.

The author wrote a number of pieces for the five modules. One reason was to ensure that there would be a certain amount of material that would be unfamiliar to the subjects thus eliminating the possibility of subjects relying on their ears rather than actually reading the music.

Data from performance sections of modules

Table 11

Module One

Three short melodies were performed using the right hand only.

The melodies were "Opus One", "Turn on the Sun" and "Pease Pudding"

Mean of scores

Control Group	Experimental Group
70.37%	79.25%

34 responses from subjects (17 from each group)

5 marks were awarded for each piece; the marks were then expressed as a percentage.

The performance of these pieces did not seem to present too many problems to the subjects. The fact that they were familiar with the melodies of two probably helped. The pieces selected were made deliberately simple so that there was a good chance of the subjects achieving well thus giving them confidence at the start of the course in the performance area.

Table 12

Module Two

Three short melodies were performed using the right hand only and one using both hands and both clefs.

The melodies were (right hand only) "Aunt Rhody", "Peter's new shoes" and "Turn on the Sun" and (both hands) "Turn on the Sun"

Mean of scores

Control Group	Experimental Group
57.78%	70%
Responses from all 36 subjects	

"Turn on the Sun" presented some real challenges to the subjects and this was reflected in the much lower scores than were recorded for Module One. The Experimental Group performed better than the Control Group by 12.22%.

"Turn on the Sun" was deliberately introduced at this early stage to create a challenge to the subjects.

This piece was later used as a test piece for the practical test. The subjects were made aware of this at the start of the Module Two so that they would have both the time and the incentive to prepare it well for the final test.

Table 13

Module Three

Two short melodies were performed using both hands and both clefs..

The melodies were "Aunt Rhody" and "The grand old duke of York"

Mean of scores

Control Group	Experimental Group
59.44	83.33%
Responses from all 36 subjects	

The gap between the two groups was quite substantial (23.89%)

A possible reason for this might have been that there was slightly less time available to the subjects to prepare this music as the class time available for one group was slightly shorter than usual for reasons beyond the control of the author. This applied to the second class only in the Control Group.

Table 14

Module Four

One melody only was performed using both hands and both clefs..

The melody was "The Saints".

Mean of scores

Control Group	Experimental Group
56.67%	66.66%
Responses from 35 subjects	

One absence was recorded from the Experimental Group.

There was less of a gap between the scores (9.99%) recorded by both groups than in the previous module.

Module Five

Time constraints were such that the author considered that the gathering of data for "Ode to Joy" would have not given a clear indication of standards achieved by the subjects. Only 5 minutes were available for learning the "Ode to Joy". The author considered it was most important that all subjects had an opportunity to revise both of the pieces required for the practical test in the following week. This decision applied to both the Control and Experimental Groups.

Table 15

Module One/Extension

Two melodies were included in this section of the module, "Waltz" and "Happy Days". Both were composed by the author to test the reading skills of the subjects at the beginning of the field trial. The "Waltz" was designed to provide an easy example of music in simple triple time.

Mean of scores

Control Group	Experimental Group
91.11%	97.22%

Responses from all 36 subjects

Both groups scored very highly with the Experimental Group slightly ahead.

Subjects found that the contents of the first Module did not present them with too many problems. Both groups had plenty of time to try out both the pieces in the extension section of the module.

Module Two/Extension

Three melodies were included in this section of the module, "Who's that?", "March" and "Dinah". One ("March") were composed by the author to test the reading skills of the subjects at the beginning of the field trial.

There were 3 only responses from the Control Group and none from the Experimental Group. 2 completed both pieces and one completed one piece. The average mark was 6.5 out of a total of 10.

This result was not unexpected. Given the high degree of difficulty of Module Two, virtually all the subjects did not have enough time left over to proceed to the Extension section of the module.

Module Three/Extension

Two melodies were included in this section of the module, "Au clair de la lune" and "Trumpets". "Trumpets" was composed by the author to test the reading skills of the subjects and was in simple triple time. "Au clair de la lune" was designed to provide an easy example of music in simple quadruple time.

There were only 4 responses. This time they were from the Experimental Group (from the 92F class). 4 completed both pieces and 2 completed one piece. The average mark was 9 out of a total of 10.

This was an interesting result. The author had noted that this class worked particularly well. The cooperative mode of learning appeared to have been very well particularly well applied.

The Control Group Group (the second class) had less time available to them for reasons given under Module Three (data from performance section of programme).

Table 16

Module Four/Extension

One melody was included in this section of the module, "The banks of the Ohio". This piece had many of the same characteristics that "The Saints" had and ,in particular, the frequent use of tied notes.

Mean of scores :

Control Group	Experimental Group
48.46%	68.75%

Responses from all 29 subjects

13 responses from the Control group and 16 responses from the Experimental Group.

The Experimental Group achieved the better result by a large margin (20.29%).

Both groups took less time than was expected to perform "The Saints" and were therefore able to proceed to the Extension/Activity in the module.

Module Five/Extension

One melody was included in this section of the module, "Waltz". This piece was written in simple triple time.

Only two returns from the Experimental Group (again the 92E group). One was very well prepared and the other much less so. Marks were not given as they were not awarded for the other performance area of this module.

Module Five had to be rescheduled to give all the subjects a further opportunity to revise their two pieces for the practical test.

Conclusions

The author found that the process of awarding marks was not a straightforward one for the reasons given earlier in this section of the report on the field programme.

He believed that not too many firm conclusions should be made because of the imprecise nature of the statistics. Nevertheless, he considered that there was sufficient evidence to suggest that the Experimental Group did perform better overall than the Control Group in the performance area in the first four modules of the programme

Data resulting from the field trial programme (after the programme)

Assessment of data by the External Assessor

Practical Keyboard Tests

A short practical test was given during the last week of the programme. The test was designed to see how well the subjects involved in the field trial programme were able to perform two short pieces of music. The results of the test were then processed and the data obtained was analysed.

The two pieces that were selected for the test were "Turn on the Sun" and "The grand old duke of York". These particular pieces were selected because they presented a variety of challenges to the performer.

"Turn on the Sun" was arranged for two hands using both the treble and the bass clefs. The left hand part was a chordal one with one chord given for each bar of the music. The level of coordination required between the right and left hands was quite exacting. The music was rhythmic and it should have been performed at a crisp pace. Probably the most difficult feature of the music was the number of changes of chords in the left hand. The piece was first introduced into the programme in Module Two. There were a number of occasions during the field trial programme when it was revised. Course members were told that they would be tested on this particular piece of music when they were working on Module Two.

The second piece, "The grand old duke of York" was also written for two hands and used both clefs. This time, the left hand was not played at the same time as the right hand and was also more interesting rhythmically than in "Turn on the Sun". The piece should have been performed as a march with a secure and steady rhythm maintained throughout. One of the problems with this piece was that acceleration could easily take place in bars 5,6,and 7. Another area that needed careful attention was the need for clear, sharp articulation in the left hand part. "The grand old duke of York" was introduced in Module Three. Course members were told that they would be tested on this particular piece of music when they were working on Module Three.

The two pieces formed a contrasted pair. They were selected for the practical test because between them, they tested a number of points of technique and interpretation. Both of these pieces had featured in earlier keyboard programmes undertaken by the author with other groups of students. The author was confident that both pieces were suitable for subjects who had only been playing the keyboard for 5 weeks. Copies of both pieces are available in the Module Two booklet ("Turn on the Sun") and the Module Three booklet ("The grand old duke of York").

How the test was conducted.

The author taped all the subjects involved in the programme with the exception of two who were not able to take part because of sickness. The taping took place in a small room next to the keyboard laboratory. The room was a sound proofed one. The keyboard used for the test was

the same model as the one used throughout the programme (a Yamaha PSR 75 model).

The author, rather than the external assessor, taped the subjects because the identity of the subjects was already known to the assessor. To have introduced another person other than the author and the assessor for the taping of the pieces might well have caused extra stress for the subjects.

Every effort was made to insure that the subjects were as comfortable as possible with the process used for testing them. One performance of each piece was recorded. However, if a variable took place, such as music falling off the stand, or, as also happened on four occasions, a performance was started before the author was ready, a second attempt was allowed.

The author went to some lengths to ensure that the assessor had no way of knowing who was performing the pieces. He used 20 separate tapes and spread the performances through them using a random system rather similar to selecting straws of different lengths.

A performance consisted of one subject playing *both* pieces. As has already been noted, sometimes there was more than one performance of the same piece. Only performances by two subjects were allowed on any one tape.

This large number of tapes was necessary because it was most important that there was a possibility that performances from both groups could take place at the beginning of each tape to allow for a

random presentation of the performances. The subjects were allocated a number between 1 and 34 (2 numbers were missing because there were 2 subjects unable to take part in the test).

The assessor was then given the 20 tapes (numbered from 1 to 20) with the number of the subject given in the order in which they appeared on the tapes (for example, Tape No.1, Subject No1 and 2. Tape No.2, Subjects 3 and 4 etc.). The diagram below illustrates how this was done. He was also given the counter number for each performance on each tape to minimize the amount of time required to locate the individual numbers on each tape.

Table 17

Table showing the relationship between the tapes and the subjects.

Number of tape	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Number of subject	1	3	5	7	9	11	13	15	16	18	19	21	22	23	25	27	28	30	32	33
	2	4	6	8	10	12	14		17		20			24	26		29	31		34

One subject from each group was unable to sit the practical test

The numbering of the tapes was different to the numbering of the subjects as it related to the Control and Experimental Groups.

The table below shows the numbers as they related to the Control and Experimental groups. Numbers 1 to 18 relate to the Control Group and 19 to 36 to the Experimental Group.

Table 18

Table showing the relationship between the tapes and the subjects according to which group they were in.

Number of tape	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Number of subject	16	20	5	7	29	14	3	8	34	12	33	2	9	31	4	13	6	17	26	1
	15	30	21	28	27	10	23		36		22			25	18		24	32		19

One subject from each group was unable to sit the practical test

The number of the subject refers to the number as it appears in the Control Group (numbers 1 to 18) and the Experimental Group (numbers 19 to 36).

The criteria used for assessing the performances.

Variables encountered before and during the practical tests.

By far the most significant variable was encountered with the performances of one of the two classes (92A) that formed the Experimental Group. Due to unforeseen circumstances (a bereavement, involving a journey to England), the author had, at very short notice, to reschedule the time for the practical test for the 92A class. It was to have been held two days later, at the normal class time. The author had to contact the group and arrange for another time for the practical test (at the lunch break) .

The actual time for the test was not a good one because many of the subjects had attended classes throughout the morning and did not have an opportunity to have a break before the test took place.

Although nearly all of the group (there was one absence) were available to take the practical test, it was very clear to the author that the short notice given for the test had some very adverse affects on the standards of the performances. Subjects were generally unsettled, in some cases they did not even have their own copies of the music (because of the short notice given). The performances were, on the whole, well below the standards that the author had come to expect from this group who had performed extremely well in all areas of the programme up to this point. The author believed that this poor levels of performance can, to some extent be explained by the data collected during the programme and also by the external assessor in the theory of music and ear tests areas.

There was also very little opportunity for this class to practise for the test in the first part of class time which would have been made available to them as was the case with the other classes. This would have to be seen as another variable which acted against the subjects in this group (92A) performing to their individual potential.

Subjects from the 92A class were naturally very aware that their performances were not as good as they might have been and, in many cases, whilst fully understanding the circumstances, expressed their personal disappointment at their own level of performance. This group

of subjects were most enthusiastic and supportive of the cooperative style of learning they had experienced in the field trial programme.¹³⁴

The author noted that subjects from the 92A class, almost without exception, used the minimal time available for practise on the day of the test to concentrate on the harder of the two pieces, "Under the Sun". This situation may well have had some bearing on the level of performance of this piece as was recorded by the External Assessor during the practical test.

The second class (92F,) who were also involved in the cooperative learning programme, *was* able to take their test at the scheduled time and their results were generally very good and compared favourably with subjects in the Control Group. This was the smaller of the two classes involved in the cooperative programme and contained only 6 subjects. The author has included a comparative analysis between the performance of this group with the Control Group as well as an analysis of the performance of the complete Experimental Group relative to the Control Group. The author believed that this procedure would give a truer representation of the performing abilities of the Experimental Group than would otherwise have been the case.

Other variables affecting both the Experimental and Control groups were minor ones and included performances having to be repeated because of minor mishaps such as the music falling off the stand. Also, in four cases, subjects started to perform too early when the tape was ready to record. There was also an instance when the author had to change tapes and a performance had to be repeated.

The author considered that the performance of the 92A group was adversely affected by the variable discussed in this section of the report on the field trial programme. He believed that had the members of the 92A class performed at the level that they did during the programme in the final practical tests, the results could have been very different.

To support this hypothesis, the author first examined the results of the performances of subjects only from the 92A class in relation to the results of the Control Group in the performance sections of Modules One, Two, Three and Four.

Data relating to the results of the performances from the complete Experimental Group were then compared with the results of the Control Group in the performance sections of Modules One, Two, Three and Four.

Table 19

Module One

Three short melodies were performed using the right hand only.

The melodies were "Opus One", "Turn on the Sun" and "Pease Pudding"

Mean of scores

Control Group	Experimental Group (92A)
70.37%	95%
30 responses from subjects	

18 from the Control group and 12 from the Experimental Group

The 92A group performed much better than the Control Group (24.63%)

Table 20

Module Two

Three short melodies were performed using the right hand only and one using both hands and both clefs.

The melodies were (right hand only) "Aunt Rhody", "Peter's new shoes" and "Turn on the Sun" and (both hands) "Turn on the Sun"

Mean of scores

Control Group	Experimental Group
---------------	--------------------

57.78%	75.83%
--------	--------

30 responses from subjects

18 from the Control group and 12 from the Experimental Group (92A)

The 92A group performed significantly than the Control Group (18.05%).

Table 21

Module Three

Two short melodies were performed using both hands and both
clefs.

The melodies were "Aunt Rhody" and "The grand old duke of York"

Mean of scores

Control Group	Experimental Group
59.44%	78.18%

29 responses from subjects

18 from the Control Group and 11 from the Experimental Group (92A).

The Experimental Group (92A) performed significantly better the
Control Group (18.74%)

Table 22

Module Four

One melody only was performed using both hands and both clefs.

The melody was "The Saints".

Mean of scores

Control Group	Experimental Group
56.67%	74.55%
Responses from 29 subjects	

18 from the Control Group and 11 from the Experimental Group

The Experimental Group (92A) performed significantly better than the Control Group (17.88%).

Conclusion

The Experimental Group (92A class) were well ahead of the Control group in the results of the performance section in all the first four Modules. The author believed that there was sufficient evidence from the data available to suggest that the altered time for the practical test for the 92A group had a detrimental effect on the results of the practical test for this group.

Data from the performance test.

Data relating to the performance tests is presented in four tables.

Tables 23 and 24 related to the performance of "The grand old duke of York"

Tables 25 and 26 related to the performance of "Turn on the Sun"

Table 23 compared the results obtained between the Control group and all of the Experimental Group.

Table 24 compared the results obtained between the Control Group and the Experimental Group (92A).

Table 25 compared the results obtained between the Control group and all of the Experimental Group.

Table 26 compared the results obtained between the complete Control Group and the complete Experimental Group (92A).

Table 23

First Piece "The grand old duke of York"

Mean of responses

Control Group	Experimental Group
84.7%	74.11%
Response from 34 subjects	

17 from the Control Group and 17 from the Experimental Group

The Control Group clearly scored more highly than the Experimental Group (10.59%).

The author considered that the variable given in relation to the performance of the Experimental Group had a significant bearing on this result

Table 24

Mean of responses	
Control Group	Experimental Group
84.7%	84%
Responses from 23 subjects	

17 from the Control Group and 6 from the Experimental Group

When the results of the Experimental Group (92A class only) were compared with those of the Control Group, they were almost identical.

This group of subjects from the Experimental Group was not affected by the variable experienced by the other members of the Experimental Group (the one concerned with the time of the test) and the results between them and the Control Group were virtually identical.

Table 25

<u>Second Piece "Turn on the Sun"</u>	
Mean of responses	
<u>Control Group</u>	<u>Experimental Group</u>
64.7%	70.58%
<u>Responses from 34 subjects</u>	
17 from the Control Group and 17 from the Experimental Group	

"Under the Sun" was the more difficult of the two pieces performed.

Results indicate that the Experimental Group performed better than the Control Group by 5.88%.

Consideration should be given to the variable which adversely affected the performance of a number (the 92A class) of the Experimental Group (the one concerned with the time of the test). It is of interest to note that the Experimental Group as a whole was still able to perform at a higher level than the Control Group.

Table 26

Second Piece "Turn on the Sun"

Mean of responses

Control Group	Experimental Group
64.7%	81.67%
Responses from 23 subjects	

17 from the Control Group and 6 from the Experimental Group

When the Experimental Group was reduced to members of the 92F class who were unaffected by the variable experienced by the 92A class as noted in comments regarding table 3, the results are even more in favour of the Experimental Group with a difference of 16.97%.

Conclusions

The author believed that there was sufficient evidence resulting from an analysis of the available data from the practical tests to indicate that the Experimental Group performed at least as well and almost certainly better than the Control Group.

He considered that there was a strong case for believing that the results from the majority of the Experimental Group were both seriously and adversely influenced by a last minute decision to change the time for testing one of the two classes that made up this group. Despite this variable, the Experimental Group was still able to achieve superior

results in the performance of the second ,and more difficult, piece in the test. than did the Control Group

Overall Conclusions

In the performance area of the field trial programme after consideration has been given to the results of data collected from both during the programme and the final practical tests, there appeared to be a strong body of evidence to suggest that the cooperative programme of learning as experienced by the Experimental Group in the field trial was a more successful one than the tutor directed programme experienced by the Control Group.

When these results were combined with those resulting from the theory of music and ear training components of the field trial programme, the overall result appeared to indicate that the cooperative learning programme was more effective than the tutor directed one in all the areas that were covered in the field trial programme.

The Field Trial Programme

The Questionnaire

During the final (sixth) week of the field trial programme, all 36 subjects from both the Control and Experimental Groups completed a questionnaire.

The questionnaires were different for both the Control and Experimental groups. The reason for the necessity for two different questionnaires was that although both groups were given an identical programme, the way in which the programme was taught was not the same for each group. The Control Group was taught in a conventional way and was tutor directed. The Experimental Group worked in pairs under the guidance of the tutor for a high proportion of the programme, following a cooperative model of learning.

The following questions were asked of both groups. The first number relates to the number of the question in the Control Group's questionnaire and the bracketed number relates to the number of the question in the Experimental Group's questionnaire.

1(1), 2(2), 3(3), 4(4), 5(5), 6(6), 7(7), 8(15), 9(20) and 10(21).

In addition to these questions, the Experimental Group also answered a number of questions relating specifically to the cooperative programme. These questions were;

(8), (9), (10), (11), (12), (13), (14) and (16), (17), (18) and (19).

The questionnaire covered the following areas.

Questions 1(1) and 2(2) were concerned with the musical background of the population prior to their entry to the course.

Question 3(3) asked why the population selected the keyboard option for the course rather than the guitar option.

The remaining questions in both questionnaires were concerned with the course itself. Copies of both questionnaires are included in the appendices.¹³⁵

Collecting the data from both questionnaires

Raw data was collected from both sets of completed questionnaires. The raw data is included along with copies of the questionnaires in the appendices.

Presenting the data from both questionnaires

Data relating to all the questions in both questionnaires is processed in the following ways.

Where a question is the same for both questionnaires, the information gathered is presented as follows;

1. The original question from the questionnaire(s) appeared at the top of the page. The question was written in bold, *Italic script*.

2. A graph comparing the data from both groups was then presented. The graph is headed 'Figure 1" and directly underneath, the title is given and underlined. The graph itself appears under the title.

3. Graphs have been prepared for the purposes of comparing data from the results of the Control and Experimental groups. Where results are obtained from one group only, no graph is given. This applied to data processed from the Experimental Group's questionnaire, questions 8 to 14 and 16 to 19.

4. A table comparing the data from both groups was presented underneath the graph. The table compared the results from both groups.

5. The results of the data were then analysed and conclusions were drawn based on the evidence supplied by the data.

6. Although a larger sample would clearly have increased the validity of the results, the author considered that data collected from 36 subjects could be regarded as valid. His reading of a number of published research studies included some with similar or even smaller numbers of subjects than were involved in his own study.

Order of presentation of data from the two questionnaires

Questions relating to both questionnaires were processed first followed by questions relating to the Experimental Group.

Summary of conclusions based on both questionnaires

An overall summary covering the main points gathered from summaries of individual questions from both questionnaires is included. It will be found after the presentation of information relating to the individual questions from both questionnaires.

Musical Background

"Did you play a musical instrument before entering the course?"

Figure 3

Number of instruments previously learned by all 36 subjects prior to entry to the course.

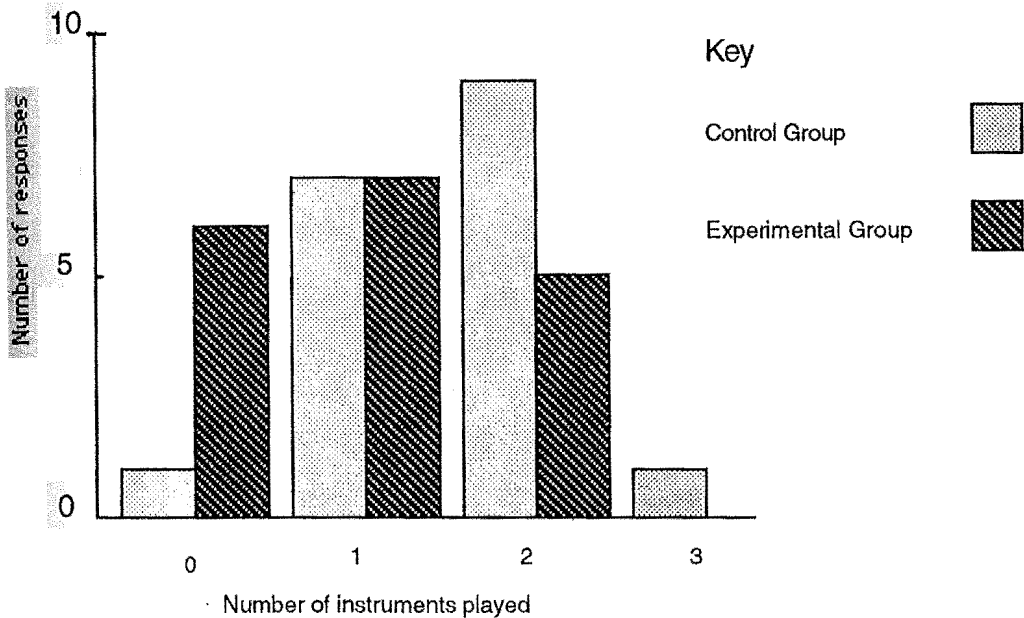


Table 27

Mean of scores

Control Group	Experimental Group
1.56	.94
Responses from all 36 subjects	

The Control Group had more instrumental experience prior to entry to the keyboard course than had the Experimental Group.

The Control Group scored .62 higher than the Experimental Group in a 5 point scale.

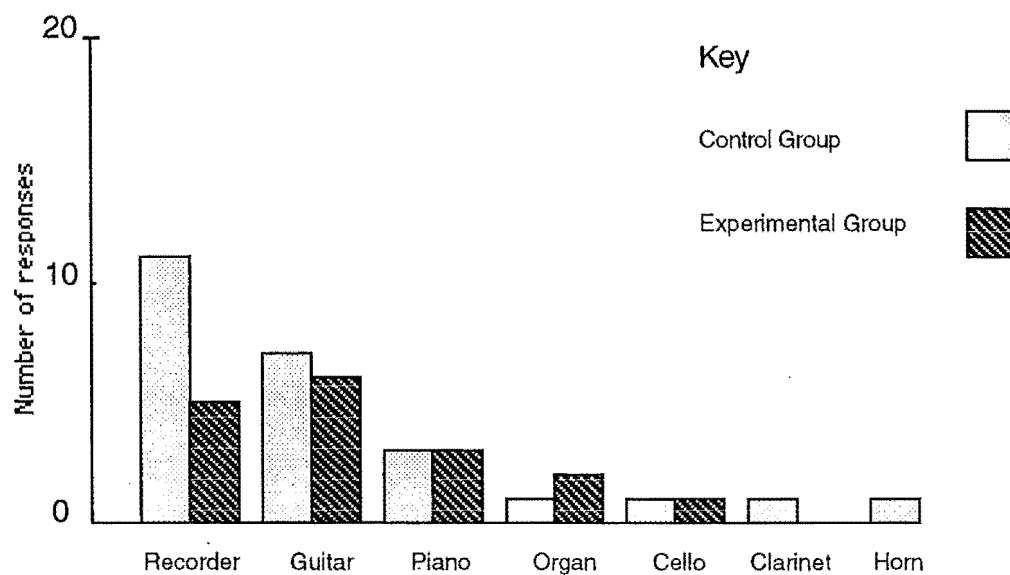
One member of the Control Group claimed he/she was not able to play an instrument. In the Experimental Group 6 members claimed that they did not play an instrument before commencing the course.

As all subjects had taken part in an instrumental course in their first year at the Christchurch College of Education, this answer probably reflected upon their perception of their ability to play an instrument rather than the fact that they had taken part in an instrumental course.

"Specify Instrument(s)"

Figure 4

Type of instruments previously learned by all 36 subjects prior to entry to the course



Responses from all 36 subjects.

The Control Group had a greater number of subjects with an instrumental background than had the Experimental Group

The Control Group recorded a total of 28 instruments..

The Experimental Group recorded a total of 17 instruments.

The Control Group recorded a wider range of instruments (8) than the Experimental Group (6).

Both groups recorded three returns of subjects with a piano background. In addition the Control Group had one organ return whilst the Experimental Group had two. These returns were of particular interest in that they might have had a bearing on the level of keyboarding skills on entry to the course. In the event, the experimenter was not aware of individual members of either the Experimental or Control Group who displayed keyboard skills above a very rudimentary level.

"How long ago did this take place?"

Figure 5

Number of years ago subjects learned to play instruments.

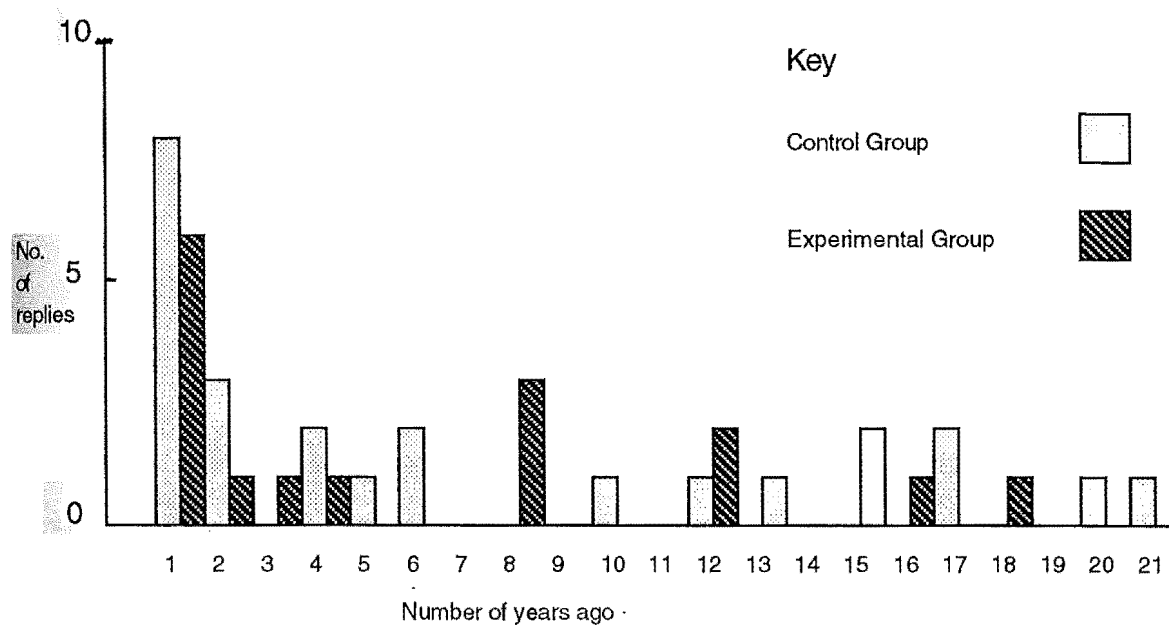


Table 28

Mean of scores

Control Group	Experimental Group
---------------	--------------------

7.16	6.06
------	------

41 Responses	
--------------	--

The Control Group on average learned to play a musical instrument 1.1 years longer ago than the Experimental Group.

8 (32%) responses from the Control Group indicated that learning took place one year ago.

6 (50%) responses from the Experimental Group indicated that learning took place one year ago.

12 (44%) responses from the Control group took place within the last two years.

7 (43.75%) responses from the Experimental Group took place within the last two years.

Results were very nearly identical (.25% difference) in number of instruments learned within the last two years.

In both groups, some subjects had learned to play instruments a considerable time before the field trial took place. Eight of the Control Group and four of the Experimental Group previously learned instruments twelve or more years ago.

"How many years did you learn the instrument for?"

Figure 6

Number of years ago that learning of instruments took place.

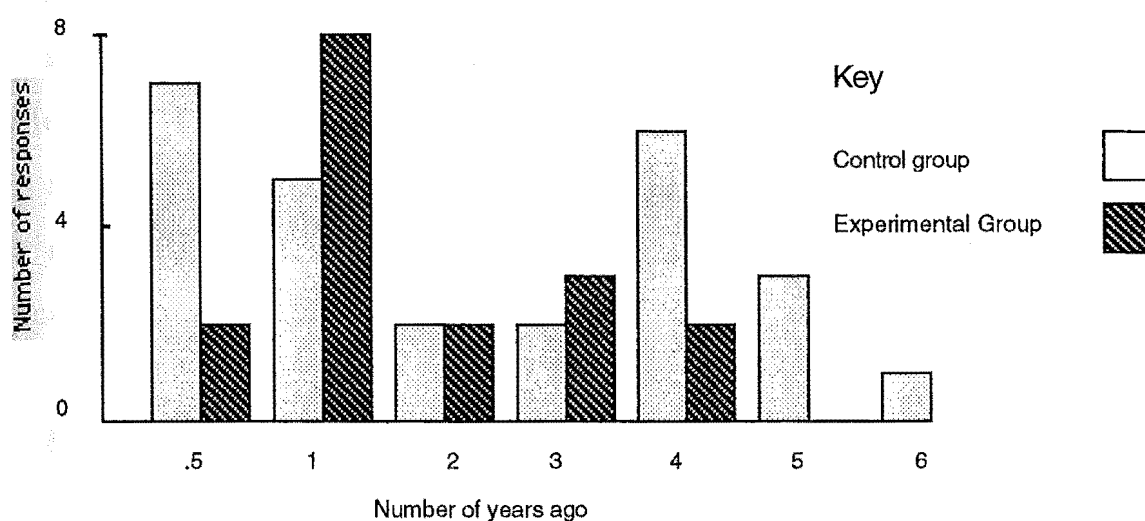


Table 29.

Mean of scores

Control Group	Experimental group
2.44	1.76

26 responses from the Control Group

17 responses from the Experimental group

Learning took place more recently in the Experimental Group than in the Control Group.

The Experimental Group scored .68 less than the Control Group indicating that learning took place for just over 6 months less on average than in the Control Group.

In the both the Control Group and the Experimental Group a number of responses indicated that learning had taken place only a year (or less) before the field trial took place. This could be explained by the fact that all members of both groups undertook an instrumental course during their first year of training at the Christchurch College of Education.

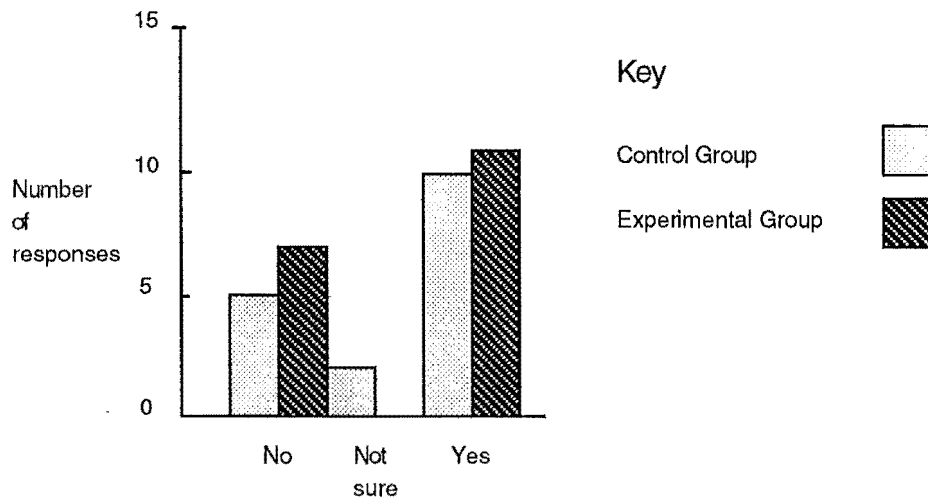
It was perhaps surprising that more responses did not fall into this category. It is possible that some respondents felt that although they had undertaken a course they did not feel that they were able to play the instrument in question. A later question (3) asked course members why they had selected the keyboard course rather than the guitar course. A high number of responses (and especially from the Control Group) indicated that they had already done the guitar course but did not feel that they could play the guitar. This could have had some bearing on the number of returns in this question.

2.5

"Were you able to read music on entry to the course?"

Figure 7

Subjects' perception of their reading skills on entry to course



Responses from 35 (97.2% return) subjects

The Experimental Group had a higher response in both the 'No' and the 'Yes' categories than did the Control Group.

The Experimental Group had two more responses in the 'No' category than the Control Group and one more 'Yes' than did the Control Group.

There was one nil return from the Experimental Group.

The Control Group had 2 'Not sure' returns perhaps indicating an uncertainty as to what the actual standard of reading skill was required for a 'Yes' return.

There appeared to be an inconsistency with this return when results were matched with the next part of the question which asked subjects to rate their reading skills on a 5 point scale with a 'one' indicating no reading skills.

Four members of the Control Group and 3 from the Experimental Group recorded their responses in the 'one' point of the scale.

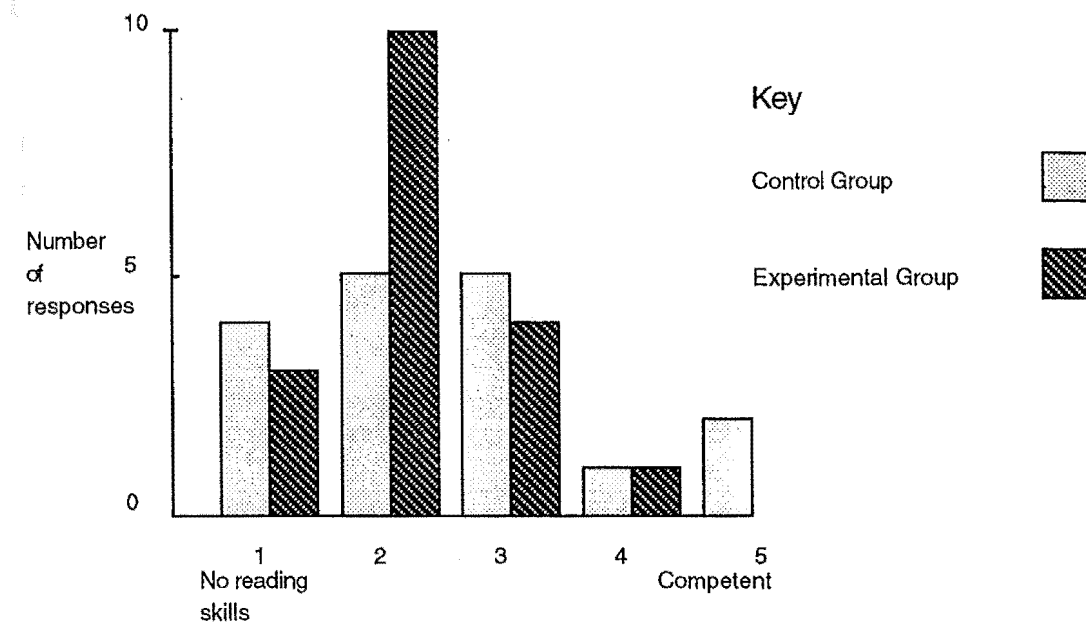
The two 'Not sure' (Control Group) and the one 'No return' (Experimental Group) (ref. Figure 7) plus four others clearly perceived themselves as music readers of modest ability and opted for the 2nd point in the 5 point scale (ref. Figure 7).

2.6

"How would you rate your reading skills on entry to the course?"

Figure 8

Subjects' perception of their reading skills on entry to the course on a 5 point scale.



Responses from all 36 subjects

Table 30

Mean of scores	
Control Group	Experimental Group
2.53	2.16

The Control Group had a higher perception of their music reading skills prior to entry to the course than did the Experimental Group.

The Control Group scored .37 higher than the Experimental Group. A 5 point scale was used.

Four (22.22%) of the Control Group considered that they had no music reading skills on entry to the course.

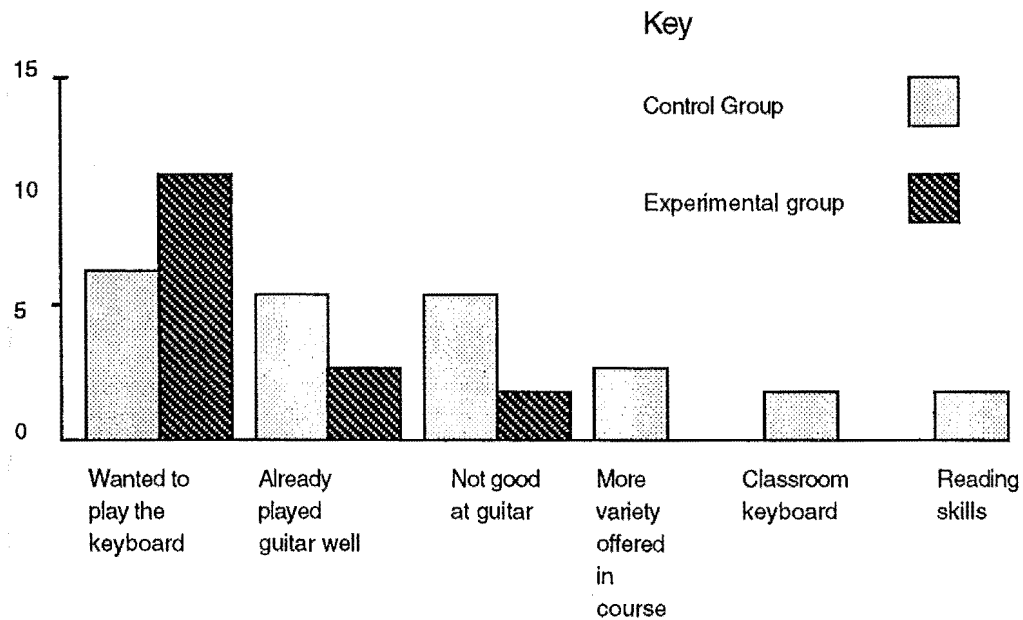
Three (16.67%) of the Experimental Group considered that they had no reading skills on entry to the course.

Two (11.11%) of the Control Group considered that they had very competent reading skills on entry to the course whereas none of the Experimental Group felt that they were in this category.

"Reasons for taking this course rather than the guitar course".

Figure 9

Subjects' reasons for taking the keyboard course



Responses from all 36 subjects

Also mentioned (one response for each).

Control Group

Suitability of course for beginners, the tutor, more enjoyable than the beginner guitar course.

Experimental Group

Playing skills, also learning the guitar.

Subjects had a choice between learning the guitar or keyboard

There were three main reasons why subjects elected to join the keyboard course.

1. They wanted to play the keyboard

Control Group 7 (38.9%)

Experimental Group 11 (61.11%)

Motivation to play the keyboard clearly an important factor. This was noticeably higher in the Experimental Group.

2. They felt that they were already able to play the guitar

Control Group 3 (16.67%)

Experimental Group 4 (25%)

The guitar was identified as an instrument many had learned previously ¹³⁶(.

3. They felt that they were not good at playing the guitar

Control Group 6 (33.33%) Experimental Group 2 (11.11%)

This group of subjects entered the keyboard course with a feeling of failure in another instrumental area.

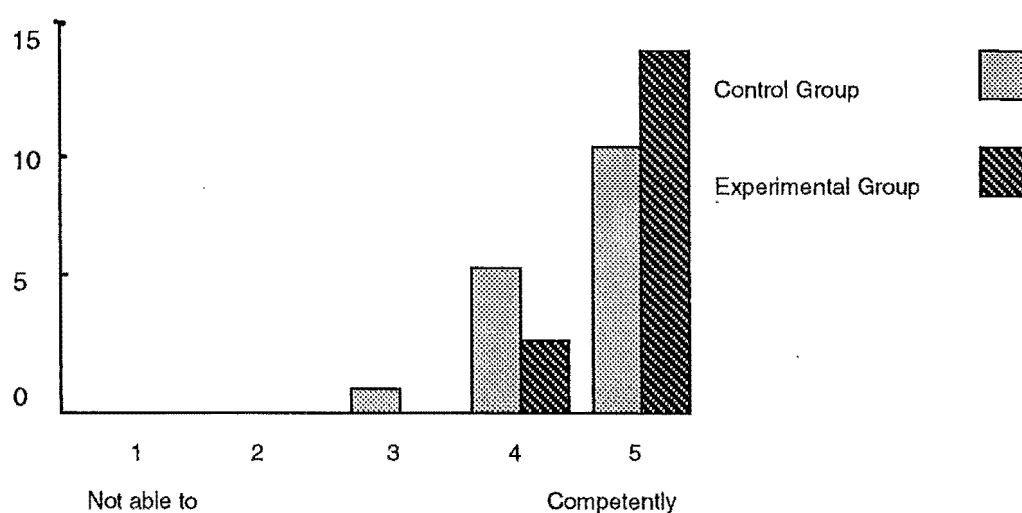
A comparison with Question 5 which included the subjects' perception of their attitude at the start of the keyboard course only includes one response (from the Control Group) with a response of 2 (using a 5 point scale), all the others were 3 or better. This would suggest that their previous, unsatisfactory experience in learning to play the guitar did not appear to have influenced their attitude at the start of the keyboard course.

4.1

"At the end of the field trial period (the first six weeks of the course), did you feel you were able to play at least two pieces of music (right hand)?"

Figure 10

Subjects' perception of their ability to play at least two pieces of music using the right hand..



Responses from all 36 subjects

Table 31

Mean of scores	
Control Group	Experimental Group
4.61	4.86

Subjects in the Experimental Group had a higher perception of their ability to play at least two pieces of music using the right hand than subjects in the Control Group.

The Experimental Group scored .25 higher than the Control Group. A 5 point scale was used (ref. Table 31).

A 5 point scale was used (ref. Table 31).

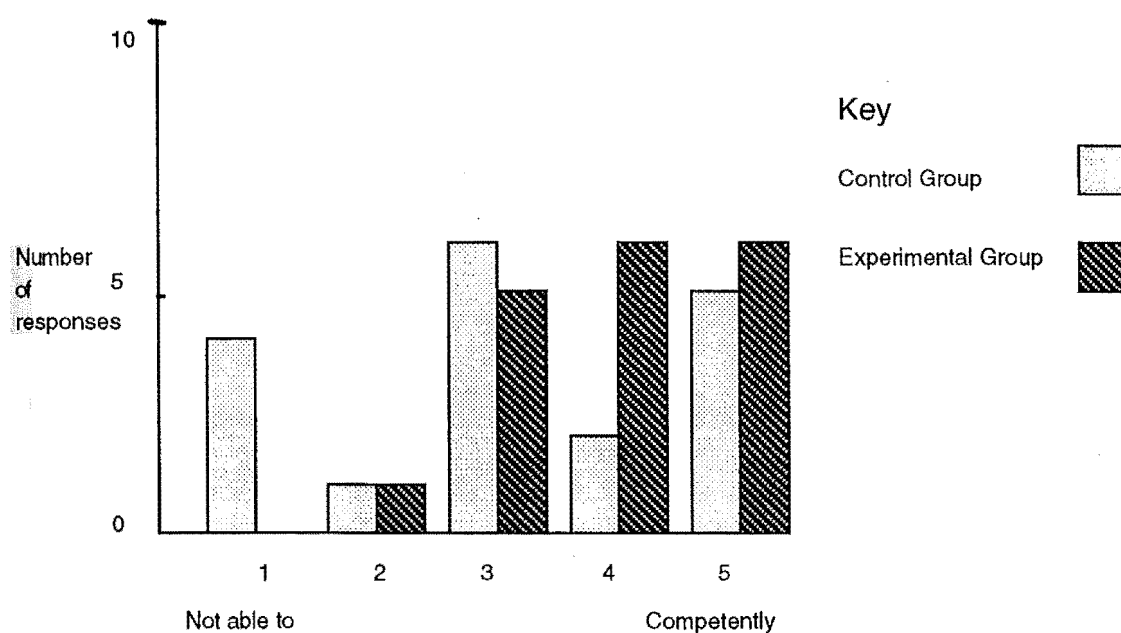
Both groups had a high perception of their ability with mean scores of 4.61 (Control Group) and 4.86 (Experimental Group) (ref. Table 31).

4.2

"At the end of the field trial period (the first five weeks of the course), did you feel that you were able to play more than two pieces of music (both hands)?"

Figure 11

Subjects' perception of their ability to play more than two pieces of music using both hands.



Response from 36 subjects

Table 32

Mean of response scores

Control Group	Experimental group
3.16	3.97

Subjects in the Experimental Group had a higher perception of their ability to play more than two pieces of music using both hands than had subjects in the Control group.

The Experimental Group scored .81 higher than the Control Group. A 5 point scale was used (ref. Table 32).

4 subjects in the Control Group identified as not being able to perform more than 2 pieces.

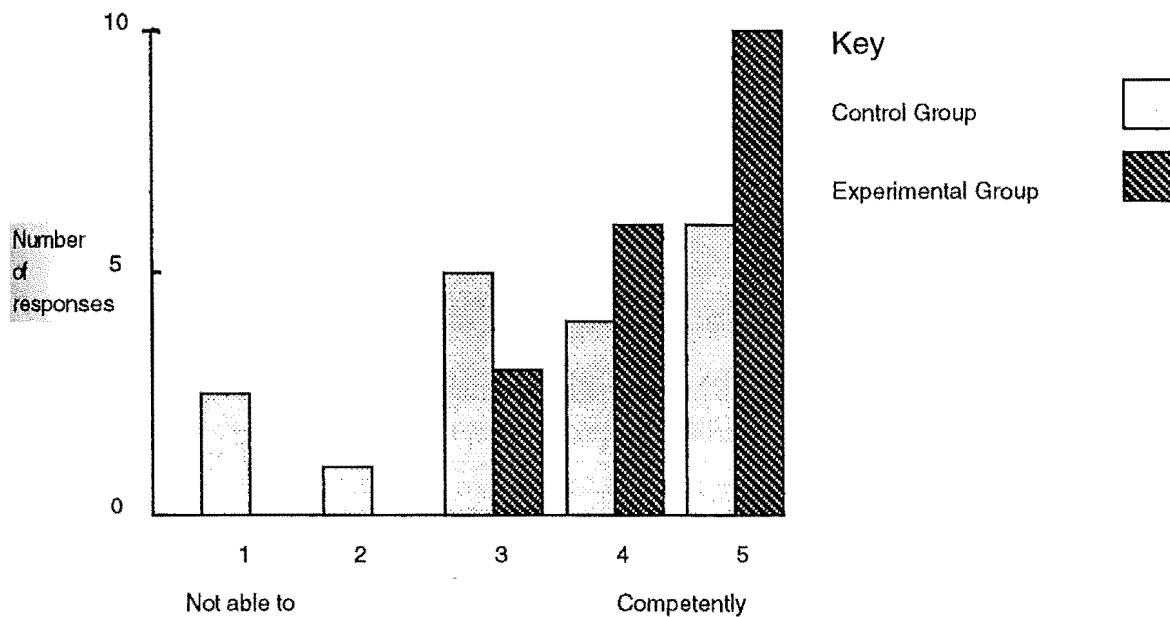
One response in the Experimental Group was between the 2 and 3 on the 5 point scale. This response was treated as a 2.

4.3

"At the end of the field trial period (the first five weeks of the course), did you feel that you were able to play two pieces of music (both hands)?"

Figure 12

Subjects' perception of their ability to play two pieces of music using both hands.



Responses from 36 subjects

Table 33.

Mean of scores	
Control Group	Experimental Group
3.64	4.33

Subjects in the Experimental Group had a higher perception of their ability to play two pieces of music using both hands than subjects in the Control Group.

The Experimental Group scored .69 higher than the Control Group. A 5 point scale was used (ref. Table 33).

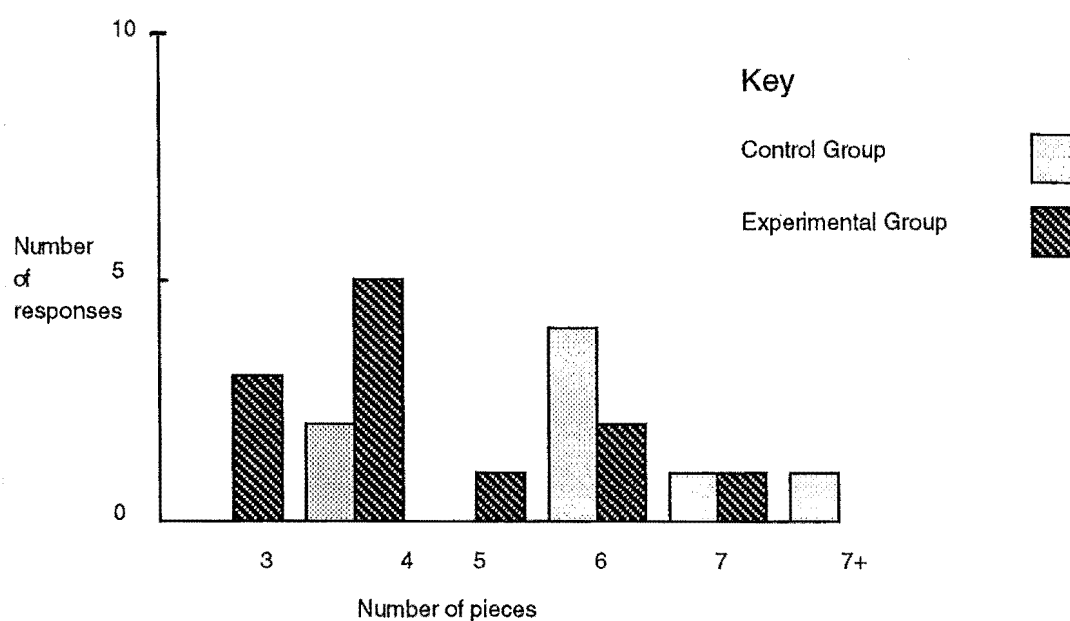
Two members of the Control Group considered that they were not able to perform two pieces of music using both hands. All members of the Experimental Group felt that they were able to perform two pieces of music using both hands.

4.4

"At the end of the field trial period did you feel that you were able to play more than two pieces of music (both hands)? How many pieces altogether?"

Figure 13

Subjects perception of their ability to play more than two pieces of music by identifying the actual number of pieces.



Responses from 20 subjects.

12 from the Experimental Group

8 from the Control Group

Table 34.

Mean of response scores	
Control Group	Experimental Group
5.87	4.42

More subjects from the Experimental Group (12) felt that they were able to play more than two pieces of music than from the Control Group(8).

At the top of the scale (7+), the only one subject who felt he/she had achieved at this level came from the Control Group (ref. Figure 34).

The Control Group achieved a higher overall mean (5.87) than did the Experimental Group (4.42).

One return in the Control Group indicated 7+. As there were only 8 pieces of music in the programme that used two hands, an 8 return was given.

4.5

"Did you feel that your reading skills improved during the field trial period?"

Figure 14

Subjects' perception of the improvement in their reading skills.

Responses from all 36 subjects.

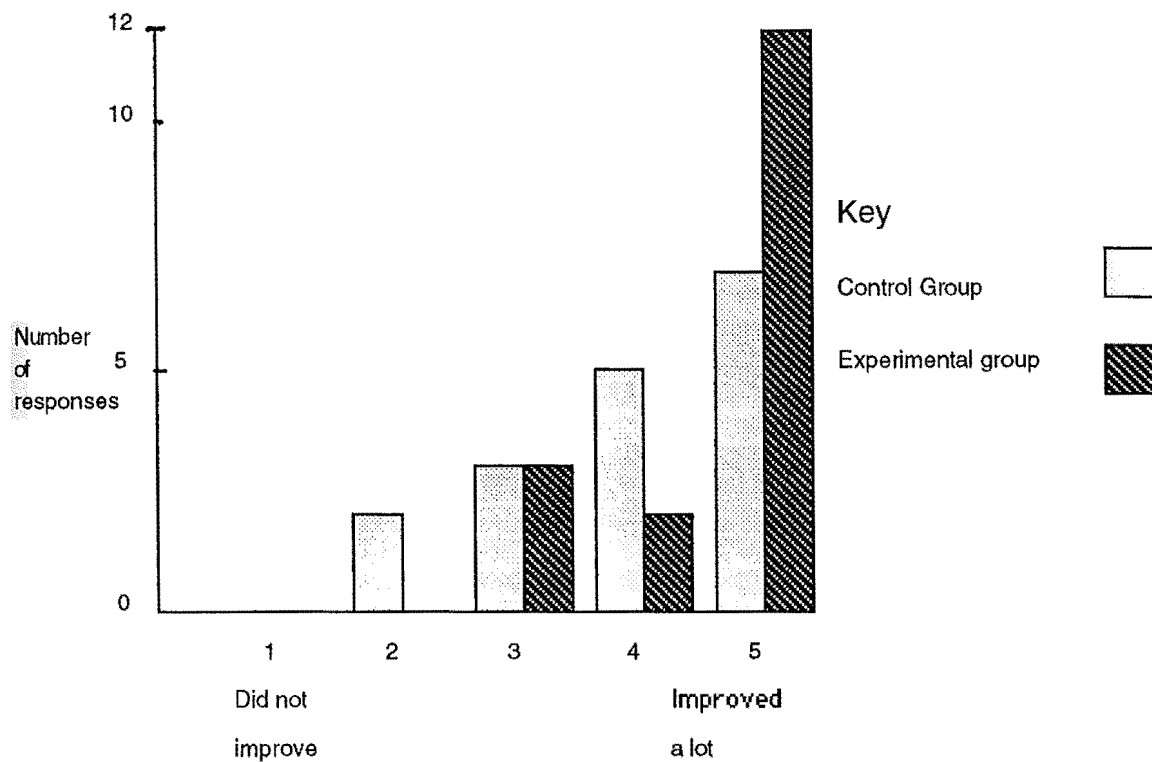


Table 35

Mean of scores	
Control Group	Experimental Group
4.00	4.55

Subjects in the Experimental Group scored an average of .55 higher than the Experimental Group in their perception of the improvement in their reading skills (a 5 point scale was used).

The high mean mark for both groups indicated that the most subjects felt that the they had made a considerable improvement.

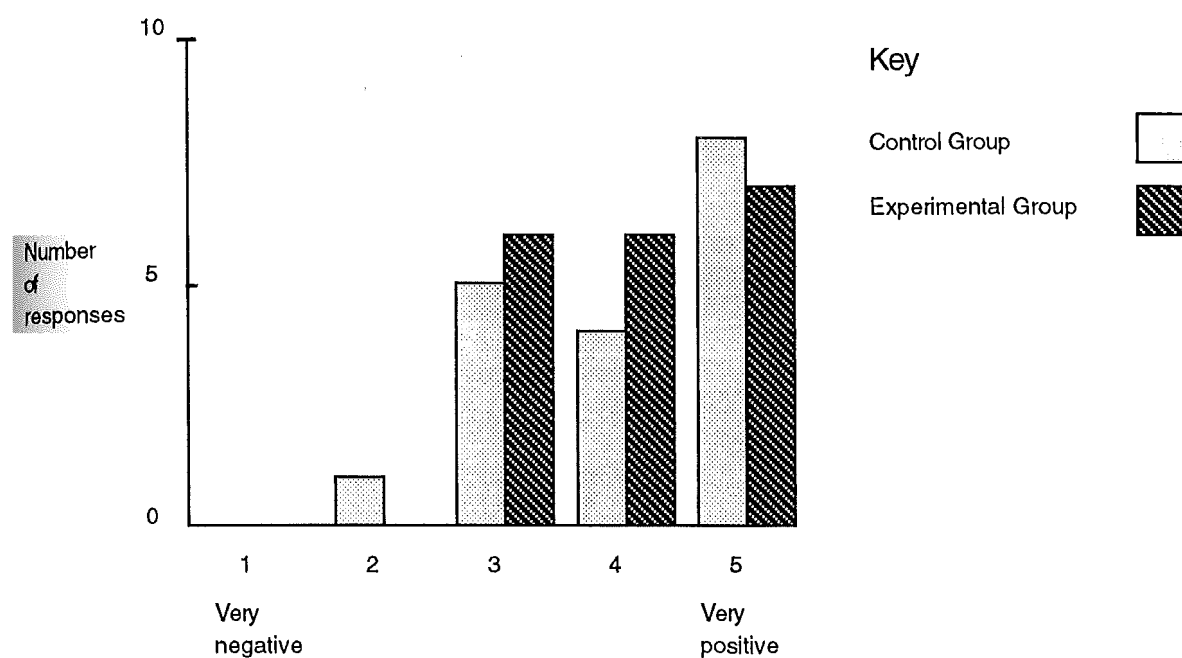
This result should be compared to the results from Question 2.6 which asked how they rated their music reading skills on entry to the course. Here the situation was reversed with the Control Group having the higher perception of their ability to read music.¹³⁷

5.1

"Did you feel that your attitude to the course changed during the field trial period?"

Figure 15

Subjects' perception of their attitude at the start of the course.



Responses from all 36 subjects

Table 36.

Mean of scores	
Control Group	Experimental Group
4.08	4.28

The Experimental Group were slightly more positive about the course on entry than were the Control Group.

The Experimental Group scored .2 more than the Control Group. A 5 point scale was used.

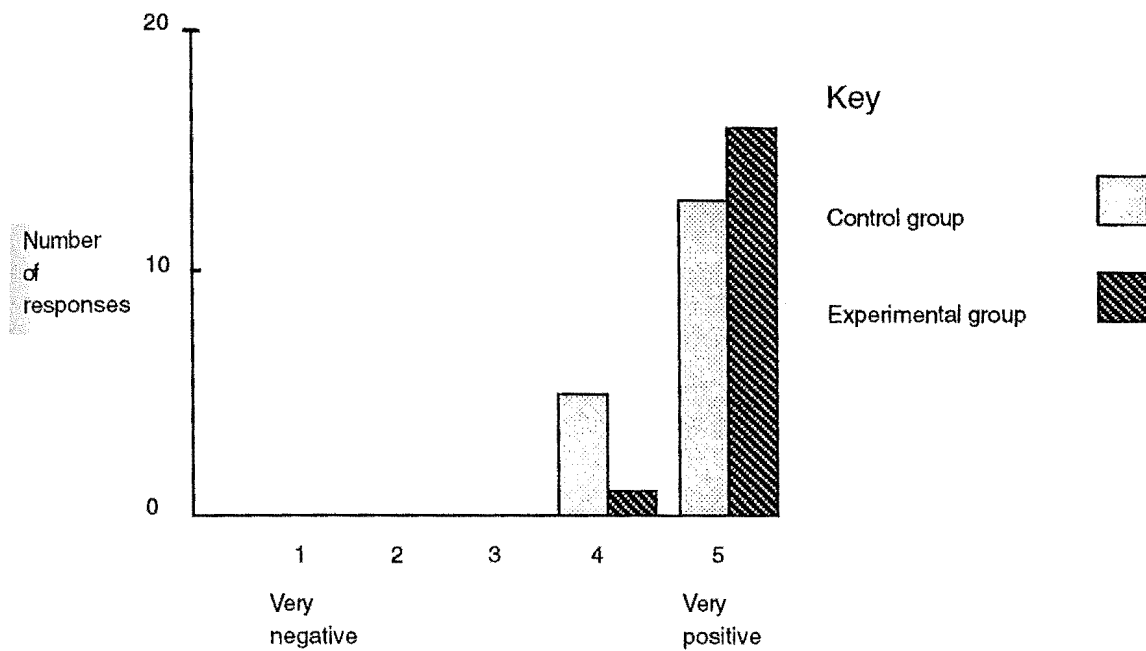
Both groups scored well (in the top two categories, 4 and 5 on scale).

5.2

"Did you feel that your attitude to the course had changed during the field trial period?"

Figure 16

Subjects' perception of their attitude at the completion of the field trial period.



Responses from 35 subjects

Table 37

Mean of scores

Control Group	Experimental Group
4.75	4.94

The Experimental Group was slightly more positive about the course at the end of the field trial period than was the Control Group.

The Experimental Group scored .19 more than the Control Group. This was nearly (.02) the same margin as was recorded between the groups at the start of the course.

Both groups scored in the top two categories only (4 and 5 on the scale).

There was one nil return from the Experimental Group.

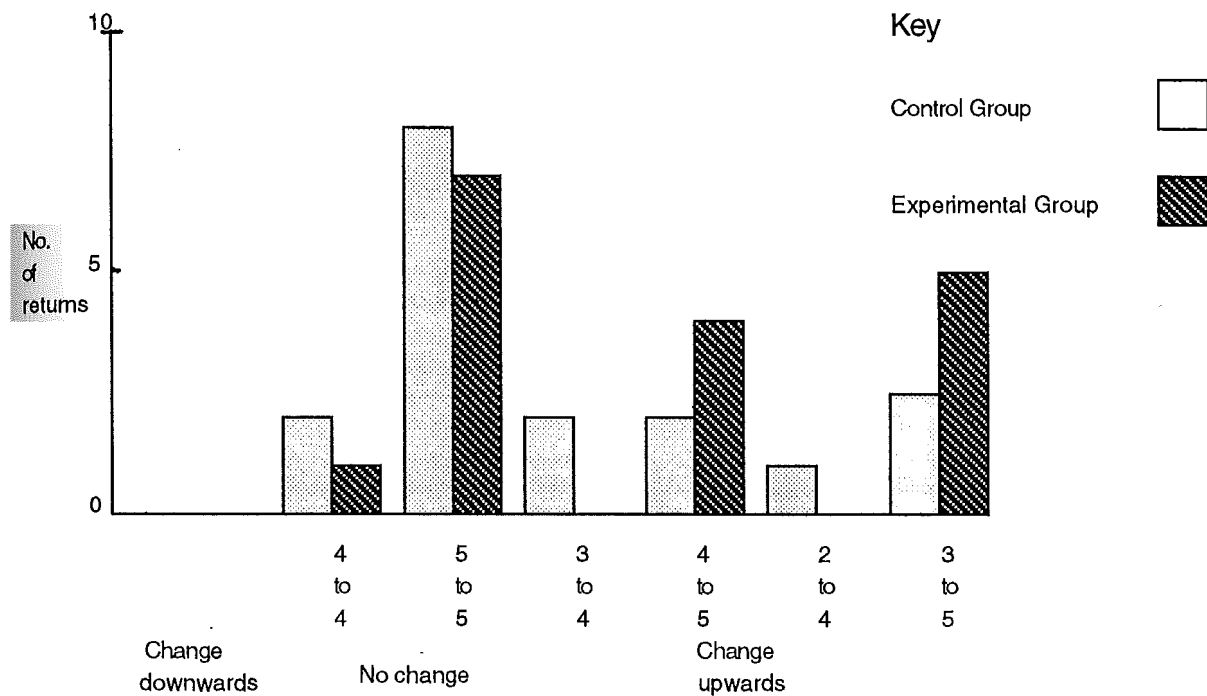
One return from the Control Group recorded a 4.5 for the score on entry to the course and also at the end of the field trial period, this score was treated as a 4 in the statistical returns.

5.3

"Did you feel that your attitude to the course changed during the field trial period?"

Figure 17

Changes in attitude recorded between the start of the course and the completion of the field trial period.



Downwards Movement

No downwards movement was recorded.

No Movement

A significant percentage (50%) indicated that no change had taken place.

A significant number of returns were already in the top two categories (4 and 5). 10 subjects from the Control Group and 8 from the Experimental Group did not change (information obtained from individual returns).

Upwards Movement

8 (44.44%) of the Control Group moved upwards.

9 (52.94%) of the Experimental Group moved upwards. There was one nil return from this group.

The Control group gained 12 points overall.

The Experimental Group gained 14 points overall.

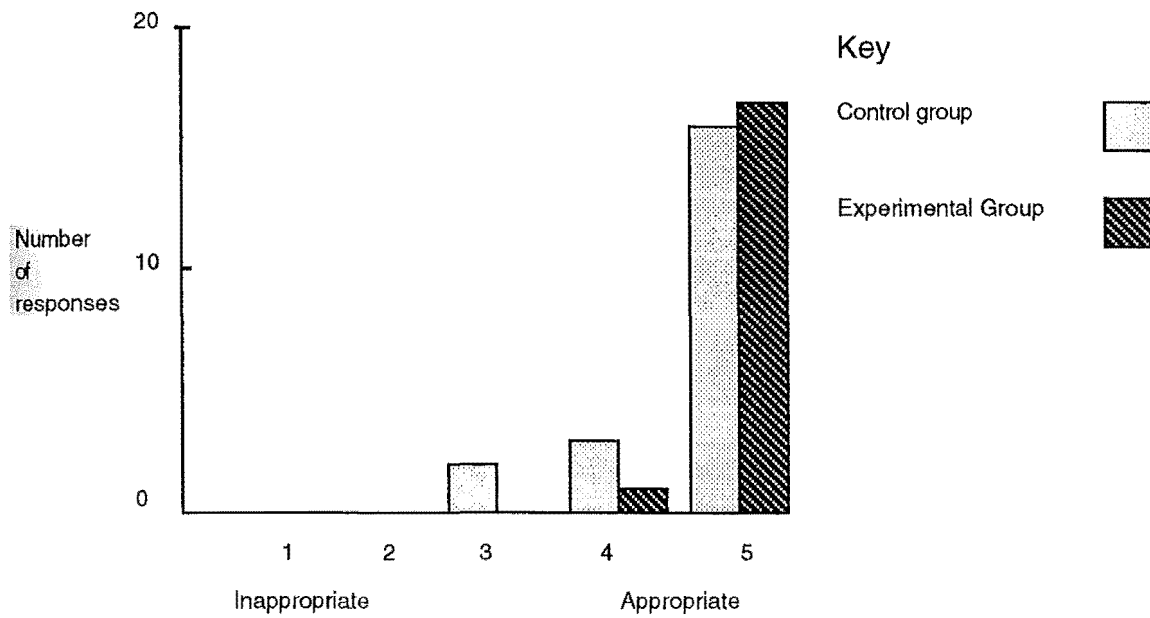
Overall the Experimental Group scored slightly more than did the Control Group.

6.

"How appropriate were the contents (modules) used in the field trial?"

Figure 18

The subjects' perception of how appropriate the contents (modules) were.



Responses from all 36 subjects.

Table 38

Mean of scores	
Control Group	Experimental Group
4.64	4.94

The Experimental Group was more satisfied with the contents of the course than was the Control Group.

The Experimental Group scored .3 higher than the Control Group. A 5 point scale was used.

30 out of 36 (80.33%) gave the highest rating of 5 to the contents (modules) of the course.

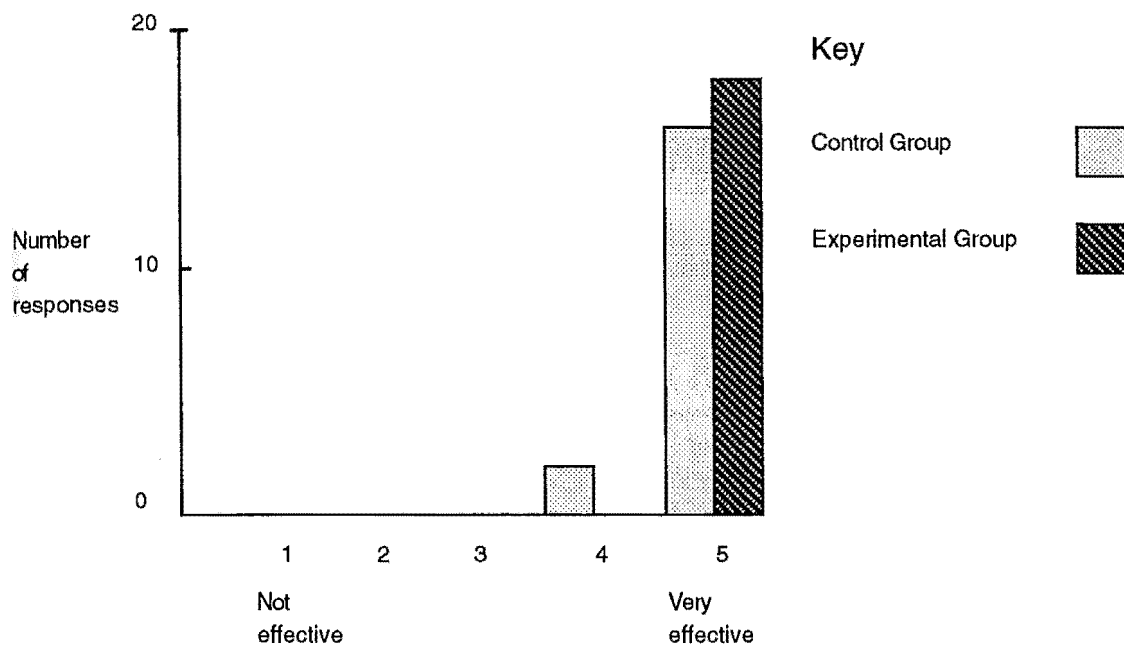
33 out of 36 (91.67%) gave the highest ratings of 4 or 5 to the contents of the course. Of this 33, 16 (88.89% of group) came from the Control Group and 18 from the Experimental Group (100% of group). This result implied that the course was perceived as being appropriate by the vast majority of both groups thereby eliminating a possible variable had this not been the case.

7.

" Please comment on the delivery of the course."

Figure 19

Subjects' perception of how effective the delivery of the course was.



Responses from all 36 subjects.

Table 39

Mean of response scores	
Control Group	Experimental Group
4.92	5.0

The Experimental Group was more satisfied with the delivery of the course than were the Control Group.

The Experimental Group scored .08 higher than the Control group.

34 out of 36 (91.67%) gave the highest rating of 5 to the delivery of the course.

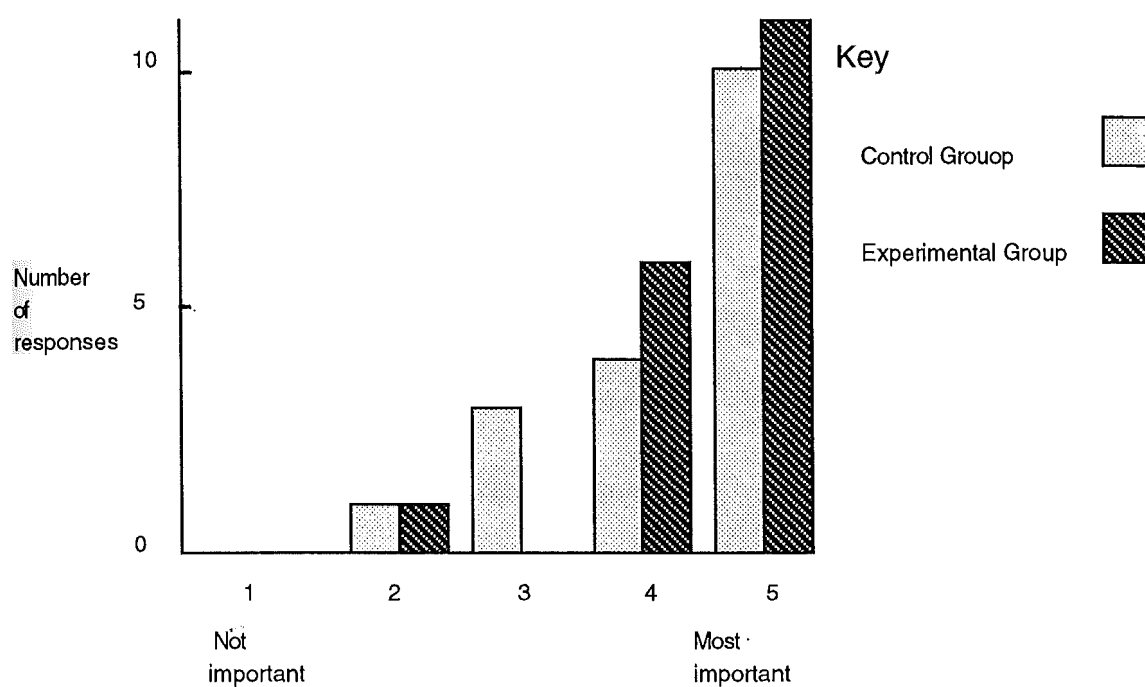
36 out of 36 (100%) gave the highest ratings of 4 or 5 to the delivery of the course. This result implies that all course members from both groups were satisfied or very satisfied with the delivery of the course thereby eliminating a possible variable had this not been the case.

8. 15.

"How important was the role of the tutor to you in the learning process?"

Figure 20

Subjects' perception of the importance of the tutor in the programme.



Responses from all 36 subjects.
Mean of responses

Table 40

Control Group	Experimental Group
4.3	4.5

The Experimental Group scored .2 higher than did the Control Group. A 5 point scale was used.

Both groups saw the role of the tutor as being very important (5 on the scale) with a combined total of 21 out of 36 responses (58.3%) in this category .

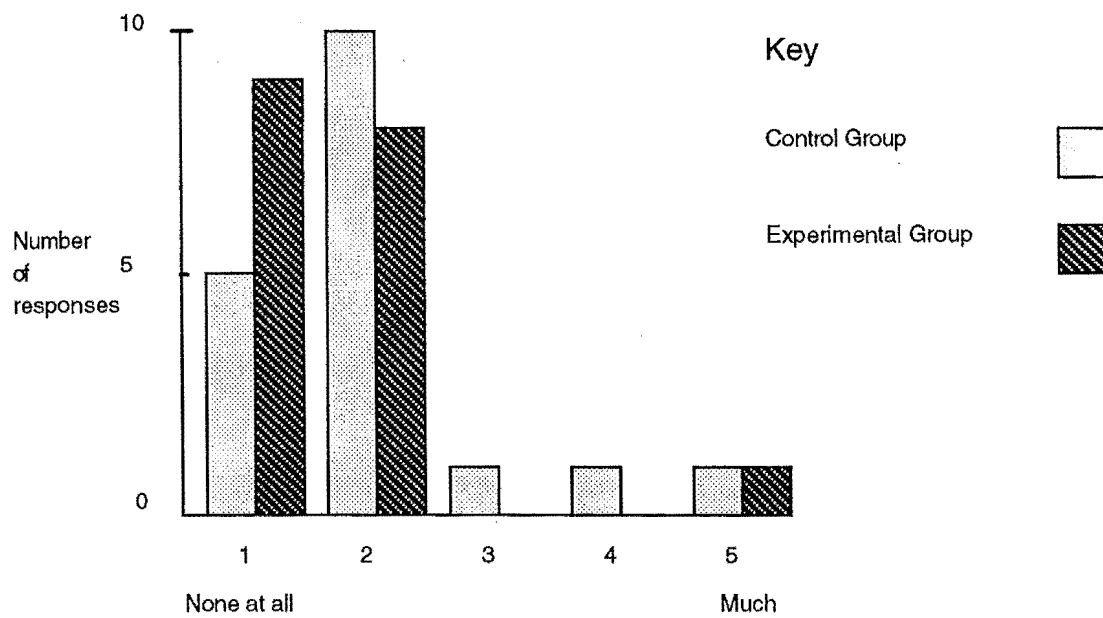
The Experimental Group's results have to be seen in relation to results from Questions 9 and 10 (Experimental Group Questionnaire) which related to the cooperative learning field trial programme and the importance of the peer teacher.

9. 20

"Did you find that learning to play the keyboard caused you any anxiety?"

Figure 21

Subjects' perception of the anxiety factor when learning to play the keyboard.



Responses from all 36 subjects

Table 41

Mean of scores	
Control Group	Experimental Group
2.06	1.67

The stress factor was perceived as being less by the Experimental Group than by the Control Group.

The Experimental Group scored .39 less than the Control Group. A 5 point scale was used (ref. Table 1).

The vast majority of both groups (88.89%) responded in the first two degrees of the 5 point scale (1 and 2), indicating little or no stress was involved.

More members of the Experimental Group (9) saw the process of learning the keyboard as being free of stress than did those in the Control Group (5).

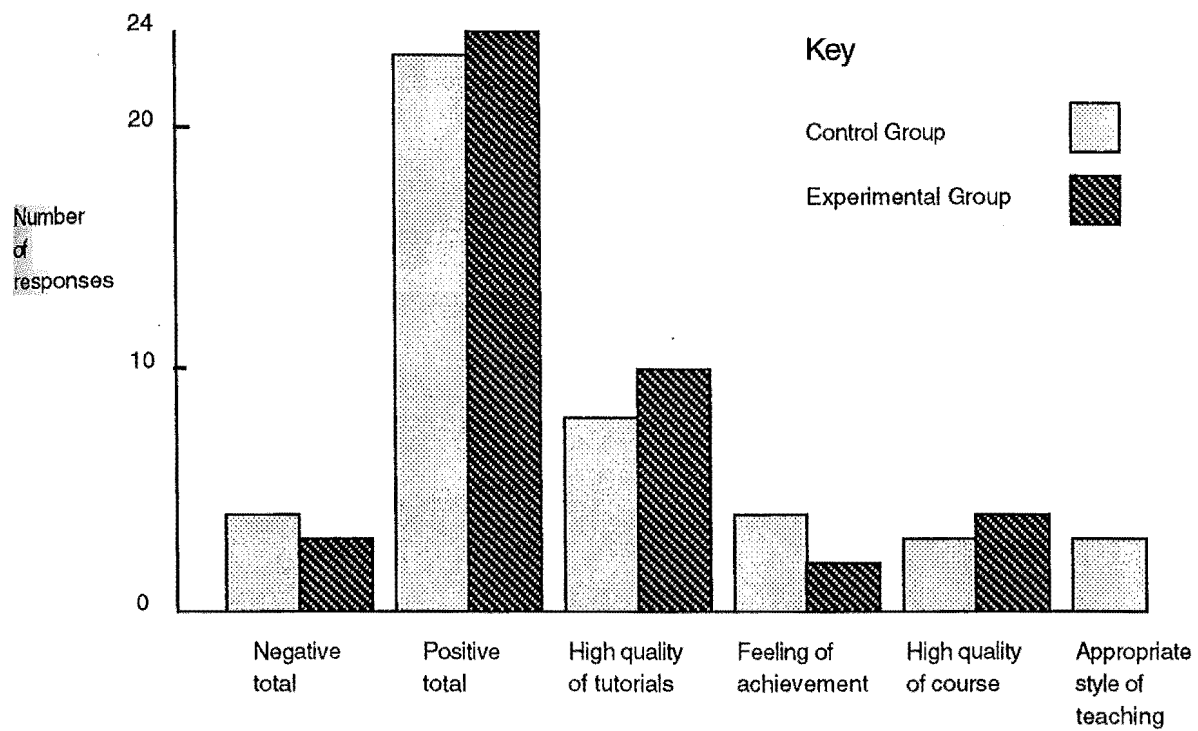
One member of the Experimental Group recorded a 5 (or highly stressed) response. This was in complete contrast with the remainder of this group who responded in the first two degrees of the 5 point scale (1 and 2).

10.21

"Please add any comments you may care to make not already covered by the above questions."

Figure 22

Added comments to questionnaire



52 responses

All comments were entirely voluntary ones

Responses

Control Group 26

Experimental Group 26

Positive comments

Control Group 22 (84.61%)

Experimental Group 23 (88.46%)

Negative Comments

Control Group (15.59%)

Experimental Group (11.54%)

Two comments (Experimental Group) referred to there not being enough time because the class before did not finish on time.

Two comments were made by both groups.

1. The high quality of the tutor(ing)

Control Group 8 (44.44% of group)

Experimental Group 10 (55.56% of group)

2. High quality of course

Control Group 4 (22.22%)

Experimental Group 4 (22.22%)

4 responses from the Experimental group commented favourably about the cooperative style of learning experienced in the field trial programme

The vast majority of responses expressed satisfaction with the field trial programme and the ways in which it was carried out.

8.

"How did you feel the cooperative programme compared with a totally tutor directed one (as in your first year instrumental programme)?"

Response from all 18 subjects

Mean of response scores 4.78

A 5 point scale was used with 1 (much worse) and 5 (much better).

The subjects scored 4.78 indicating that they considered the cooperative directed instrumental programme to be much better than a tutor directed one.

9.

*"How important was the role of your field-trial partner
(as the teacher) to you in the learning process?"*

Response from all 18 subjects

Mean of response scores 4.17

A 5 point scale was used with 1 (not important) and 5 (most important).

The subjects scored 4.17 indicating that they considered that their field-trial partner was important to them in the learning process.

10.

*"How important was the role of your field-trial partner
(as the one being taught)?"*

Response from all 18 subjects

Mean of response scores 3.94

A 5 point scale was used with 1 (not important) and 5 (most important).

The subjects scored 3.94 indicating that they considered the role of their field-trial partner (as the one being taught) as important but not quite as important (4.17) as the role of their field-trial partner (as the teacher) in the learning process.

11.

"In your role of teacher did you feel that you were adequately briefed?"

Responses from all 18 subjects

Mean of response scores 4.5

A 5 point scale was used with 1 (not well briefed) and 5 (very well briefed).

The subjects scored a mean of 4.5 indicating that they considered that they were well or very well briefed.

This was a very significant result. Had the briefing been considered to be poor, the next stage of the cooperative learning process might have been adversely affected (where the one who had been briefed became the teacher)

12.

*"In your role as the one being taught, did you feel that
you were adequately briefed?"*

Response from all 18 subjects

Mean of response scores 4.72

A 5 point scale was used with 1 (not well briefed) to 5 (very well briefed).

Subjects scored a mean of 4.27 indicating that they considered that they were well briefed by their field-trial partner in their role of the one being taught.

One response was at a 2 level indicating that poor briefings were considered to have taken place.

13.

"Do you feel that you and your field-partner were given adequate opportunities to consult with the tutor?"

Response from all 18 subjects.

Mean of response scores 4.83

A 5 point scale was used with 1 (never) and 5 (always).

The subjects scored 4.83 indicating that they felt that there were nearly always adequate opportunities to consult with the tutor.

14.

"Do you feel that you and your field-partner were given adequate opportunities to consult/debrief with each other?"

Opportunities to consult

Responses from all 18 subjects

Mean of response scores 4.72

A 5 point scale was used with 1 (never) and 5 (always).

This result clearly indicates that the subjects felt that there were plenty of opportunities to consult.

Opportunities to debrief

Responses from all 18 subjects

Mean of response scores 4.61

The processes of consultation and debriefing are central to the cooperative style of learning and the high scores recorded in both these areas were positive indicators that these processes were perceived by the subjects as having taken place.

The score for the opportunities to debrief was slightly less (.17) than was the score for the opportunity to consult.

One subject recorded a 2 for both parts of this question suggesting that there could have been problems in communication between the pair rather than reflecting upon the actual communication system used in the field trial. This view is supported by the very positive returns from the rest of the group.

15.

"How important was the role of the tutor to you in the learning process?"

(The data from this question has already been analyzed (ref. 8.15) relative to the importance of the tutor to members of the Control Group.)

Response from all 18 subjects

Mean of response scores 4.52

A 5 point scale was used with 1 (not important) and 5 (most important).

The role of the tutor was perceived as being an important or very important one.

A comparison with Questions 9 and 10 was of some significance in that these questions were concerned with perceptions of the importance of the role of the field-trial partner (as the teacher) (4.17) and the importance of the field-trial partner (as the one being taught) (3.94). The results from Question 15 suggest that subjects perceived the role of the tutor (4.52) as being the most important one of the three.

16.

"Did you find that having two teachers (your tutor and your partner) created any difficulties in the learning process?"

Responses from all 18 subjects

Mean of response scores 5

A 5 point scale was used with 1 (often) and 5 (never).

Subjects perceived no difficulties in having two teachers.

This was a pleasing return in that it indicated that the flow of information from the tutor to the field trial partner (in the role of teacher) to the one being taught was a smooth one. Had this not been the case, it could well have created complications (variables) to the ways in which the field trial programme was carried out.

17.

"List three advantages (in order of importance) you see in learning to play the keyboard in a cooperative learning mode."

Responses from all 18 subjects

No. 1

Mutual support and encouragement.

9 "1st" returns and 5 "2nd" returns.

No. 2

Positive and non-threatening atmosphere.

5 "1st" returns, 2 "2nd" returns and 3 "3rd" returns.

No. 3

Two supporting teachers.

3 "3rd" returns.

Also mentioned

Better understanding, no feelings of failure, reinforcement of learning, more time for one-to-one teaching, more time for the tutor to see students, non-threatening, learning how to teach someone else, better way to teach the basics, enjoyment, programme structure, revision of skills, improved role of teacher and allowed to talk in class.

Subjects were given an opportunity to state what they perceived as the advantages of learning to play the keyboard in a cooperative learning mode. They were not asked to select from a series of possible answers.

The three advantages identified by the subjects are very similar to those that are identified in the literature for cooperative learning.

18.

" List three disadvantages (in order of importance) you see in learning to play the keyboard in a cooperative-learning mode."

Responses from 8 (44.44% of group)

No. 1.

(Equal 1st.)

Possibility of being held back by a partner.

Possibility of partner not teaching correctly.

2 "1st." returns

No. 2.

Partners should be of the same level of ability.

1 "1st." return and 1 "2nd." return.

What happens if the partner is away? The feeling of not being as good as your partner, possibility of conflicting information provided by two teachers.

The most significant feature of this return was that the majority of subjects (55.66%) did not reply. This would seem to indicate that they saw no disadvantages in the cooperative style of learning to play the keyboard. This view is supported by the responses of this group to answering the other questions in the questionnaire which virtually all had a 100% response.

Another feature of some of the responses was the use of the word 'possibility' suggesting that this was not something that they had experienced themselves when taking part in the field trial.

"Do you feel that you would use a cooperative style of learning to teach children to play a musical instrument in your classroom?"

Responses from all 18 subjects

Mean of response scores 3.94

A 5 point scale was used with 1 (never) and 5 (always).

Cooperative learning is now a widely used form of teaching in the classroom. Subjects in the field trial course are also teacher trainees. They were already familiar with some of the aspects of cooperative learning programmes as this was included in their Education courses at the Christchurch College of Education.

The field trial programme would for many have been their first encounter with cooperative learning as an actual participant. Their very positive reaction to this form of learning as encountered in the field trial programme was encouraging. They clearly indicated that they would wish to use a form cooperative learning programme in their own classroom. All members of the group indicated that they would be prepared to use a form of cooperative learning in an instrumental programme. There were no returns in the 'never' (1) category in the 5 point scale used in this question.

Summary of Questionnaires

The summary falls into three sections

- 1 The background of the subjects prior to entering to the course.
2. Questions relating to the course concerning both groups.
3. The Experimental Group's reaction to the cooperative learning programme.

1. The background of the subjects

There was no doubt that the Control group had a wider overall musical background than did the Experimental Group prior to entry to the course. This is supported strongly from data relating to Question 2.¹³⁸

The Control Group outscored the Experimental Group in the following areas;

In the *number* of subjects who claimed prior instrumental experience (+38.88%).¹³⁹

In the *number* of instruments learned (+.62).¹⁴⁰

In the *range* of instruments learned (+2).¹⁴¹

In the *number of years* instruments were learned (+.68).¹⁴²

In *musical reading skills* on entry to the course (+.22).¹⁴³

138	Ref p. 149-160
139	Ref. p 149-150
140	Ref. p. 149-150
141	Ref. p. 151-152
142	Ref p 155-156
143	Ref. p 157-160

These results would appear to indicate that the Control Group entered the course with a higher skills base than did the Experimental Group.

Motivation for entering the course was covered by question 3 where the subjects were asked why they selected the keyboard course rather than the guitar course.

The most popular reason given by both groups was that they wanted to play the keyboard with the Experimental Group clearly ahead (+5).¹⁴⁴

This was followed by a group who felt that they already were able to play the guitar. This time the Control Group scored more highly (+3).¹⁴⁵

A significant number from the Control Group cited that they were not good at the guitar (+3 higher than the Experimental Group). This might have to some extent indicated a feeling of failure and accounted for the poorer attitude reflected by this group at the start of the course.

Conclusion

The Control Group entered the course with a better musical background than the Experimental Group. However, as a whole, it did not appear to be as well motivated.

¹⁴⁴ Ref. p..161-162

¹⁴⁵ Ref. p. 161-162

2. Questions relating to the course affecting both the Control and Experimental Groups

Questions 2,3 and 4 formed a group in that they relate to the subjects' perception of their ability to read and perform music. A conclusion appears at the end of this section.

Questions 5,6,7,8, 9 and 10 covered a range of other areas and conclusions are stated at the end of question-10.

Question 2 asked a number of questions about how far the subjects felt they had achieved in terms of the number of pieces they could play at the end of the field trial period (the first five weeks of the course).

The Experimental outscored the Control Group in every area except one.

They felt more confident about playing two pieces using the right hand only (+.25)¹⁴⁶, about playing two pieces using both hands (+.69)¹⁴⁷ and about playing more than two pieces using both hands (+.81)¹⁴⁸. Subjects in the Control Group only scored more highly when asked how many pieces they were able to play (1.45)¹⁴⁹

The Experimental Group was substantially ahead in terms of how they perceived that their reading skills had improved (+.55)¹⁵⁰

¹⁴⁶ Ref. p. 163-164

¹⁴⁷ Ref. p. 165-166

¹⁴⁸ Ref. p. 167-168

¹⁴⁹ Ref. p. 169-170

¹⁵⁰ Ref. p. 171-172.

Conclusion

Subjects in the Experimental Group were ahead of subjects in the Control Group in both their perception of the improvement in their reading skills and their ability to perform on the keyboard.

Question 5 looked at the attitude of subjects to the field trial. The Experimental Group was ahead, two points in front of the Control Group.¹⁵¹

In Question 6 the Experimental Group had a higher perception of the module contents (+.56) than the Control Group.

The Experimental Group gave a perfect score of 5 to the delivery of the course (Question 7) with the Control Group only slightly behind (+4.89)¹⁵²

Both groups saw the tutor as being very important Question 8/15 with the Experimental Group a little ahead (+.22)

The Experimental Group found the process of learning to play the keyboard less stressful (-.39) than did the Control Group in question 9.

Question 10 asked subjects to add their own comments. 90% of comments were positive with both groups scoring highly (the Experimental Group scored one more positive comment).

¹⁵¹ Ref. p. 155-156
¹⁵² Ref. p. 181-182

Conclusions

In all areas covered in questions 5 through to 10, the Experimental Group scored higher than the Control Group.

Conclusions relating to the reliability of data received from the field trial programme.

Results from virtually all the questions were consistent in that they covered the higher range of possible responses. Most of the questions were presented using a 5 point scale with 5 indicating a positive attribute (for example, most important or very effective). Answers tended to be either in the 4 or 5 category and there were very few examples of scores falling outside these categories.

The author considered that that there is a strong case for considering that data obtained from the field trial was reliable from a statistical perspective. He noted the implications of inferential statistic when evaluating results and in particular noted that "the more consistently the members of each group behave, the less likely it is that any difference between the groups has arisen through accident."¹⁵³

Overall conclusions related to comparisons between the Control and Experimental Groups pointed to a better all round attitude and performance on the part of the Experimental Group, despite the head start that the Control Group appeared to have in terms of musical background, at the beginning of the course. It should be noted that both the Control and Experimental groups scored well in all questions

indicating that both groups saw the field trial as having been a successful learning experience.

Conclusions relating to the cooperative learning programme (Questions 8-20 in the Experimental Group's Questionnaire).

All the data collected from the questions relating to the cooperative learning programme indicated that the subjects were most enthusiastic about this form of learning. Scores were, almost without exception, high being between 4 and 5 on a five point scale (1 low and 5 high).

Of particular interest were the results from question 8 where they were asked to compare the cooperative learning instrumental programme they had just taken part in, with a tutor directed one they had taken part in the previous year. They overwhelmingly preferred the cooperative programme (ref. Question 8, Experimental Group Questionnaire).¹⁵⁴

Question 19 asked if they would use a cooperative style of learning to teach children to play a musical instrument in their own instrumental programmes. Again, there was a very positive response from the group. (ref. Question 19, Experimental Group Questionnaire).¹⁵⁵

¹⁵⁴ Ref. p.267

¹⁵⁵ Ref. p.269

The Experimental Group was very positive about all aspects of the cooperative learning programme to the extent that they indicated they would use a similar model in their classroom.

CHAPTER FIVE

Data resulting from a survey of keyboard laboratories in the New Zealand Colleges of Education.

The objective of the survey was to find out how keyboard courses were conducted in all the colleges of education so that information obtained from the survey could be used to assist the colleges of education with the planning of future courses. The survey also asked questions relating to the nature of the keyboard laboratories.

A questionnaire was sent to all the Colleges of Education in New Zealand in March 1993. The questionnaire was presented in two sections. The first section (Section A) was concerned with the nature of the keyboard laboratory and asked questions about what sort of instruments were used, how that were deployed etc. This section of the survey has not yet been considered in this study.¹⁵⁶

The second section (Section B) was concerned with the sort of courses that were held in the laboratories and how they were conducted. The author considered that a number of results obtained from the questionnaire had relevance to his study on adults (primary teacher trainees) learning to play the electronic keyboard using a cooperative learning programme for the following reasons:

1. The colleges of education all conducted keyboard programmes for adult learners.
2. The colleges of education all conducted programmes for students who were training to be generalist primary school teachers.
3. Group tutorial methods were used to implement keyboard courses. The author's study involves a comparative study of group tutorial methods.

When asked why they had installed keyboard laboratories in their music departments, the most frequently mentioned reason was the need to develop musicianship skills.¹⁵⁷ The author agreed with this and noted that in his study, general musicianship skills were seen as an integral part of learning to play the electronic keyboard.¹⁵⁸

The actual range of courses varied considerably from college to college. It was of interest to note that of the 18 courses described, 9 (or 50%) were for beginners. Many of these beginner keyboard courses were offered to several different groups during one year (the Christchurch College of Education offered its beginner keyboard class to 6 groups in 1993).¹⁵⁹

¹⁵⁷ Ref. p 240.

¹⁵⁸ Ref. Abstract. "The thesis examined the proposal that subjects who were training to be generalist primary school teachers and had a minimal background in music, gained more effective initial keyboard *and allied general musicianship skills* through a programme based on cooperative learning than one based on individual, tutor directed learning."

¹⁵⁹ Ref. p 240-244.

The average size for all keyboard classes was 12.6, this was higher than the Christchurch College of Education average of 10.2. The average size of the four classes involved in the field trial was 9.¹⁶⁰

Four colleges of education offered courses for first year students, two (including the Christchurch College of Education) started courses for the first time at second year level(ie courses were not offered to first year students).¹⁶¹

Half of the keyboard courses offered by all the colleges were either 10 or 12 hours long. The field trial course was only 6 hours long but only constituted the first part of the total course which was 12 hours long.¹⁶²

The vast majority (70%) of courses offered by the colleges were compulsory. The field trial programme was not strictly speaking a compulsory one because students did have a choice of either playing the guitar or keyboard.¹⁶³

A number of colleges offered ongoing courses (5 returns). The field trial course could be followed up by a more advanced keyboard course.¹⁶⁴

The field trial course was written by the author. Three other colleges indicated that they wrote their own courses.¹⁶⁵

¹⁶⁰ Ref. p.75.
¹⁶¹ Ref. p.241-245.
¹⁶² Ref. p.241-243.
¹⁶³ Ref. p.161-162
¹⁶⁴ Ref. p.246-247.
¹⁶⁵ Ref. p.248-249

The question of students progressing at different learning rates was recognised by all the colleges. All the returns indicated that provision was made for students who progress at different rates by providing appropriate materials.¹⁶⁶ This problem had been anticipated in the field trial programme by the author including extension materials at the end of each lesson.¹⁶⁷

The question was asked if cooperative learning was used in the keyboard programmes. Answers indicated that informal peer teaching did occur but not in a structured way. One reply seemed to sum this up very neatly "It tends to happen as a matter of course."¹⁶⁸

When asked what advantages they saw in teaching keyboard skills using a keyboard laboratory, three replies (including the Christchurch one) indicated the possibilities of cooperative learning. One reply given was that students tended to share and motivate each other with their progress.¹⁶⁹ This has also been the author's experience in the field trial programme and lies comfortably within the parameters of cooperative learning.¹⁷⁰

When asked to list the disadvantages in using a keyboard laboratory, two returns gave the (poor) quality of sound as a disadvantage.¹⁷¹ The author agreed with this but considered that economic considerations would have prevented better instruments being used in the laboratory.

¹⁶⁶ Ref. p. 249-250.

¹⁶⁷ Ref. p. 264-292.

¹⁶⁸ Ref. p. 251.

¹⁶⁹ Ref. p. 251-253.

¹⁷⁰ Johnson D.W. and Johnson R.T. (1991) p.150.

¹⁷¹ Ref. p 253.

Several different systems of assessment for the keyboard courses were used by the colleges of education with a grading system being used by three (including the Christchurch College of Education).¹⁷²

The final question related to the evaluation of the keyboard programmes. Student evaluation occurred in all the courses and three courses also contained opportunities for self evaluation.¹⁷³

¹⁷² Ref. p.249-250

¹⁷³ Ref. p 251-252.

CHAPTER SIX

DISCUSSION

It was apparent from the author's reading of the literature about cooperative learning that there was a pronounced scarcity of information in two key areas; cooperative learning and adults, and cooperative learning and music programmes.

The author had discovered that the bulk of research on cooperative learning related mostly to the primary school and lower level of the secondary school. There was relatively little information about cooperative learning at the upper level of the high school and very little indeed about cooperative learning involving adults.

Several data based searches were conducted in both of these areas (at the Christchurch College of Education and the University of Canterbury libraries) resulting in information that could only be described as peripheral to the topic under investigation- the effectiveness of cooperative learning programmes for adults learning to play the electronic keyboard.

The author therefore had to resort to a study of cooperative learning models in areas other than music when constructing his own field trial programme. He found when he was constructing his field trial programme, that the work of Spencer Kagan was particularly helpful.

The author considered that variables were reduced to a minimum.

1. The size of the groups was the same.
2. All subjects in both groups were teacher trainees in their second year of training.
3. The gender balance of both groups was nearly equal.
4. The overall musical background of the subjects in both groups was similar (subjects in the Control Group were slightly better qualified).
5. The length of the course was the same for both groups.
6. The content of the course was the same for both groups.
7. Attendance patterns for both groups were virtually 100%.
8. All subjects were instructed by the same tutor (the author).
9. All subjects were examined by the same assessor.

Only one significant variable did occur. The majority of the subjects in the Experimental Group were required, at very short notice, to take their practical test at a rescheduled time. The results of this group did not appear to be as good as had been anticipated (based on performance data obtained during the course).

The implementation of the field trial programme appeared to go smoothly at all stages. The author had already trialled aspects of the programme (especially in the areas of repertoire and time management)

with other groups in the earlier part of 1993 so that he would be able to anticipate possible problems that might occur with the field trial programme. He had not previously trialled any structured cooperative learning programme involving the subjects learning to play the electronic keyboard.

The author took a calculated risk by introducing a major learning hurdle in the second week of the programme (performing a piece of music involving reading music in both the bass and treble clefs). The subjects in both groups appeared to have met this challenge well as evidenced in their final performance test where they were required to demonstrate their ability on the keyboard by performing the same piece of music which they generally did to a good standard.

The author was very pleased with the overall positive attitude of both groups to the programme and especially by comments from *all* of the Experimental Group that they would adopt cooperative learning models in their own instrumental programmes in schools.

The results of the field trial programme appeared to suggest that the cooperative learning model of learning, as carried out in the field trial programme, was superior to the tutor directed programme. Data collected from all stages of the programme seemed to support this conclusion.

The author believed that the differences in the performances of both the Experimental and the Control Groups were generally not great. He also considered on the basis of data collected from the field trial

programme that both groups performed well, with the Experimental Group performing rather better overall.

The Experimental Group appeared to start from a position that was slightly behind the the Control Group in terms of general musical background but were still able to achieve better overall results by the end of the course.

The author believed that an even clearer result would have obtained if some aspects of the programme had been presented in different ways. To some extent, the cooperative programme did not have as many chances to "flow" as it should have done. The problems of maintaining a position of parity between Experimental and Control Groups resulted in some loss of momentum at times with the cooperative programme.

More consultation should have taken place between the learning partners in the Experimental Group. This was not always possible because of the strict management of the time allocations allowed for the various activities within the modules.

The concept of extension time at the end of each module appeared to work well. The idea behind the extension time was to provide more pieces of the same difficulty as those encountered in the module to reinforce the new areas of learning that subjects encountered in the module. The author believed that had the subjects in the Experimental Group not been restricted to extension activities, they could have progressed more quickly to the next module and as a result more would probably have been achieved in the programme. The introduction of

the new module would not have needed to have coincided with the start of each lesson.

The author believed that the possibilities of the cooperative learning of musical instruments for both adults and children would be well worthwhile exploring at some future date. He considered that the trial period used for his study was a short one and only appeared to establish that in the first stages of learning to play a musical instrument, a cooperative mode of learning appeared to have advantages over a tutor directed programme within the parameters of his study.

He considered that a number of longitudinal studies could well be desirable to establish just how effective cooperative learning would be in the long term and believed that there might well be a need for research in the following areas:

1. Cooperative learning programmes and beginner instrumentalists

- (i) Research that examined the learning of a wide variety of instruments for either children or adult learners.
- (ii) Research that examined group learning of a wide variety of instruments for both children and adult learners. The author has noted the practical involvement of parents in the Suzuki method.
- (iii) Research involving studies into the comparative effectiveness of cooperative learning in instrumental programmes. Are some

instruments better suited to cooperative learning programmes than others?

- (iv) Research into group instrumental learning for handicapped children or adults.

2. Cooperative learning and group instrumental work.

Given the cooperative nature of much music making, research into such areas as small group performance (string quartets, jazz ensembles) could well be of interest.

3. Cooperative learning and creativity in music.

The author's own experiences in this area have led him to believe that creativity and music for both children and adult learners could well be an area of interest for research

The author concluded that a cooperative style of learning could be applied successfully to the teaching of adult learners in the areas of beginner keyboard performance and associated musicianship skills.

The author considered that the cooperative learning has a potential to take an important place in music education programmes and should be investigated in much greater depth in the future.

ACNOWLEDGEMENTS

The author acknowledges with gratitude the assistance and encouragement given by the following people in the formulation of his study.

For his guidance and direction at all stages of the study

avid Sell Associate Professor in Music. The School of Music.

The University of Canterbury.

For providing information about the keyboard laboratories and the keyboard programmes in the New Zealand Colleges of Education.

Dr. Roger Buckton Auckland College of Education

Max Stewart School of Education, University of Waikato

Graham Parsons Palmerston North College of Education

Helen Willberg Wellington College of Education

Errol Moore Dunedin College of Education

For acting as assessor for the field trial programme.

Ian Dando Christchurch College of Education

For assisting with information relating to cooperative learning.

Lois Chick

Christchurch College of Education

Graham Fergusson Christchurch College of Education

For their contribution to the field trial programme.

*All of the thirty-six students from the Year Two, Primary
Programme at the Christchurch College of Education.*

BIBLIOGRAPHY

Achilles, Elayne, "Finding meaning in music for all ages". *Music Educators Journal*. Vol. 79, No. 4, M.E.N.C., Washington D.C., 1992.

Adams, Dennis, Carlson, Helen. and Hamm, Mary. *Cooperative learning and educational media. Collaborating with technology and each other*. Educational Technology Publications, New Jersey, 1990.

Adult learners. 1992 *Encyclopedia of Educational Research*, Sixth Edition., MacMillan Publishing Company. New York, 1992.

Andrini B., *Cooperative learning & math: a multi-structural approach*. Resources for Teachers Inc. San Juan, 1990.

Austin, James R., "Competition: is music education the loser?" *Music Educators Journal*, Vol. 7, No.4, M.E.N.C., Washington D.C., 1992.

Brockfield, Stephen D, *Understanding and facilitating adult learning*. Milton Keynes, Oxford University Press. Milton Keynes, 1986.

Butler, Jocelyn A., *Cooperative learning in the central elementary school*. Northwest Regional Educational, Portland., 1986.

Collett, Mary J. "Read between the lines: music as a basis for learning." *Music Educators Journal*, Vol. 78, No.3. M.E.N.C., Washington D.C., 1991.

Colwell, Richard. "Research findings: shake well before using." *Music Educators Journal*, Vol. 78, No.3. M.E.N.C., Washington D.C., 1991.

Dalton, Joan. *Adventures in thinking*. Thomas Nelson, Melbourne, 1985.

Dykman, Ruth A. "In Step with 94-142, Two by Two." *Music Educators Journal*, Vol. 65, No.5, M.E.N.C., Washington D.C., 1979.

De Nardi, G and O'Hearn R., "Preparing every teacher to be a generalist." *Music Educators Journal*, Vol. 79, No.2, M.E.N.C., Washington D.C., 1992.

Eastlund, Joyce O. "Site based management as a tool for reform." *Music Educators Journal*, Vol. 78, No. 1, M.E.N.C., Washington D.C., 1991.

Enoch, Yvonne. *Group piano teaching*. Oxford University Press, Oxford, 1974.

Enoch, Yvonne. "Many hands." *Music Teacher*, Volume 72, No. 6, Rhinegold Publishing Ltd., London, 1993.

Fraser, S.C., Beaman A.L., Diener E. and Kelem R.T. "Two, three or four heads are better than one; Modification of peer performance by peer monitoring." *Journal of Educational Psychology*, Vol. 69, No. 219, The American Psychological Association Inc., Washington, 1991.

Freidman, Mary, "Stimulating classroom learning with small groups". *Music Educators Journal*, Vol. 76, No. 2 M.E.N.C., Washington D.C., 1989.

Gazdo, G.M. *Human relationships and development: a manual for educators*. Allyn and Bacon. Boston, 1973.

Goodlad, Sinclair, *Learning by Teaching*. Community Service Volunteers, London, 1979.

Goldberg, Merryl, "Teaching and learning: a collaborative process." *Music Educators Journal*, Vol. 76 No. 4, M.E.N.C., Reston, 1989.

Grachel, John, "An integrated approach: comprehensive musicianship." *Music Educators Journal*, Vol. 79, No. 8, M.E.N.C., Washington D.C., 1993.

Holt, Dennis M. et al., "Reading, Movement Education and Music: an Integrated Approach". *Research in Music Education*. Society for research in music Education January, 1990.

House, Robert W. and Leonhard, Charles. *Foundations and principles of music education*. McGraw-Hill, New York, 1969.

Hughes, William. "From methods to practise in general music." *Music Educators Journal*. Vol. 79, No 1, M.E.N.C., Washington D.C., 1992

Hull, C.L., *Principles of behaviour. An introduction to behaviour theory.* D.Appleton. New York, 1943.

Hoffman, James A. "Computer-aided collaborative music instruction". *Harvard Educational Review*; Vol. 8 No.78, 1991

Johnson, David. W., and others *Circles of learning* (3rd ed.). Interaction Book Company, Minnesota. 1990.

Johnson, David W. and Johnson T. *Leading the cooperative school.* Interaction Book Company. Minnesota. R;15. 1989.

Johnson, David. W. and Johnson, Robert J. *Learning together and alone* (3rd.ed.). Allyn and Bacon. Massachusetts. 1991.

Kagan, Spencer. *Cooperative Learning.* U.S.A. Resources for Teachers Inc. 24:11.1990.

Kagan, Spencer. "The structural approach to cooperative learning". *Educational Leadership*, Vol. 47, No.4, Association of Supervision and Curriculum Development, Virginia, 1990.

Kalat, James W. *Introduction to Psychology.* Second Edition. Wadsworth Publishing Company, California, 1990.

Leonard, Charles and House Robert. *Foundations and Principles of Music Education.* McGraw-Hill. London, 1959.

Lautzenheiser, Tim. "Motivation and the master music teacher". *Music Educators Journal.* Vol. 7, No.4, M.E.N.C., Washington D.C., 1992.

Mason, Edwin . *Collaborative learning.* London: Ward Lock. 1970.

Ministry of Education. *Syllabus for schools. Music education. Early childhood to form seven.* Learning Media, Wellington, 1989.

Ministry of Education. *Music Education. Standard Two to Form 2.* Learning Media. Wellington, 1992.

Myers, David E. "Teaching learners of all ages." *Music Educators Journal*, Vol. 7, No. 2, M.E.N.C., Washington D.C., 1992.

O'Connor J. "Accentuate the positive". *Music Teacher* Vol. 72, No.6. Rhinegold Publishing Company, London,1992.

Plato, Kathleen C. *Federal, state, and local collobaration for effective schools*. Washington Office of the State Superintendent of Public Instruction. Washington,1989.

Rogers, Alan. *Teaching Adults*. Oxford University Press. Milton Keynes, 1986.

Ruffer, David. "The London Symphonietta education programme: an analysis of the interface between the professional artist and music in education." *British Journal of Music Education*, Vol. 5, No. I.Cambridge University Press, Cambridge,1988.

Sapon-Shevin Mara and Schniedewind Nancy. "Selling cooperative learning without selling it short." *Educational Leadership*, Association of Supervision and Curriculum Development,Virginia, Vol. 47, No.4, 1990.

Sharman, Elaine. *Music helps learning*. Studies in Music Education. New Zealand Council for Educational Research, Wellington.,1985.

Sherman, Lawrence W. and Thomas Mary. "Mathematics achievment versus individualistic goal structured high school classrooms." *Journal of Educational Research*, Vol. 79. Heldrey Publications,Washington, 1986.

Slavin, Robert E. Research on cooperative learning: consensus and controversy. *Educational. Journal of the Association of Supervision and Curriculum Development*. Association for Supervision and Curriculum Development. Alexandra, Virginia, 1989.

Smith, Janice P. "Cooperating teachers, nurturing professional growth." *Music Educators Journal*, Vol. 79, No.2, M.E.N.C.,washington D.C.,1991.

Stewart, Andrew. "Something in the City." *Music Teacher*, Vol. 71, No. 9, Rhinegold Publishing Company, London, 1992.

The Society for Music Education (Canterbury) Inc. *The Music Award Scheme*. Society for Music Education, 1992.

Tipton, Dorothy. "Music in the certification of prevocational education: a course for special people." *British Journal of Music Education*. Vol. 6, No. 1, Cambridge University Press, Cambridge, 1989

Topping, Keith. *The peer tutoring handbook*. Croom Helm, Massachusetts, 1988.

Totten, Samuel and Sills, Toni Maria. Selected Resources for using cooperative learning. *Educational Journal of the Association of Supervision and Curriculum Development*. Association for Supervision and Curriculum Development. Alexandria, Virginia, 1991.

Zentz, Donald M. "Music learning: greater than the sum of the parts." *Music Educators Journal*, Volume 78, No. 8, M.E.N.C., Washinton D.C., Reston, 1991.

APPENDICES 1**A SURVEY OF****KEYBOARD LABORATORIES****NEW ZEALAND COLLEGES OF EDUCATION****Auckland, Palmerston North, Wellington, Christchurch
and Dunedin****and****The Music Department****THE SCHOOL OF EDUCATION****UNIVERSITY OF WAIKATO****John Emeleus****July 1993**

In March 1993 the author conducted a survey of the all the New Zealand Colleges of Education to find out how keyboards were used in primary programmes as well as what kind of courses were conducted in the keyboard laboratories. A copy of this survey constitutes Appendices I and information from it has been used at various points

Keyboard laboratories have now been installed in all the New Zealand colleges of education.¹⁷⁴ The oldest established keyboard laboratory was installed in the Auckland College of Education in 1973 (it was originally situated in the former North Shore Teachers College and later transferred to the Auckland College of Education). The most recent laboratory was established in the Waikato University School of Education (which now includes the former Hamilton Teachers' College) in 1992. The Christchurch College of Education keyboard laboratory was set up in 1987.

The Christchurch College of Education keyboard laboratory consisted of 12 Yamaha PSR 75 electronic keyboards and 1 Yamaha PSR 22 electronic keyboard. Subjects use the Yamaha PSR 75 and the instructor (the author) the Yamaha PSR 22. In addition there are a number of other electronic organs and 2 Roland '20' electronic pianos which were used as portable instruments outside the keyboard laboratory. Two other keyboard laboratories were larger than the Christchurch College of Education (Auckland and Palmerston North), one

¹⁷⁴ Ref. p. 231.

was the same size (Dunedin) and two were smaller (Wellington and Hamilton)¹⁷⁵

Each keyboard had a pair of earphones attached so that the subjects were able to use the keyboards without the distraction of having to listen to the performances of other subjects on the other keyboards in the laboratory at the same time. The earphones could be detached from the instrument if required. There was no built in communication system between the instructor and the subjects. Communications were achieved by the instructor asking the subjects to remove their ear phones, this system did not appear to have presented any serious problems during the field trial programme. 4 laboratories used a communication system (Auckland, Palmerston North, Wellington and Dunedin), one more (Hamilton) had a system but used it infrequently ¹⁷⁶

One instructor had told the author on a previous occasion that he felt that communication systems had distinct disadvantages in that it was most important for the instructor to be able to clearly demonstrate points of technique to subjects in a keyboard laboratory and to achieve this, the instructor had to, literally, be beside the subject rather than giving directions to the subject through a communications system. The author agreed with this point of view.

The Christchurch College of Education keyboard laboratory was arranged with three rows of keyboards (with four instruments in each row) facing the front of the room where the instructor was based with another keyboard. The keyboards were arranged in pairs and an aisle

¹⁷⁵ Ref. p. 233-234

¹⁷⁶ Ref. p 235.

separated the pairs of instruments. Previously the keyboards had been arranged with the instruments arranged in two rows facing each other. This deployment of instruments was found to be unsatisfactory in terms of ease of communication between the subjects and the author.

The other colleges of education keyboard laboratories were arranged in a variety of ways. Five returns cited space considerations as dictating how instruments were arranged. Only one keyboard laboratory (Auckland) was arranged in a similar way to the Christchurch College of Education laboratory ¹⁷⁷ .

One other college had a laboratory which used electronic keyboards (Waikato). The other 4, Auckland, Palmerston North, Wellington and Dunedin used the Roland Electronic Piano as their main teaching instrument¹⁷⁸. The author understood that one other college was considering replacing their electronic pianos with electronic organs.

The Christchurch College of Education opted for the electronic organ in preference to the electronic piano for a number of reasons.

The electronic keyboard is frequently found in primary schools.

The piano function in some models is now particularly realistic. This was certainly an attractive feature of the Yamaha PSR 75 model.

The modern electronic organ is a very versatile instrument and its various functions (for example, the rhythm unit) is able to be used in school music programmes in a number of ways not available to the electronic piano.

¹⁷⁷ Ref. p.236-237

¹⁷⁸ Ref. p 233-234

The author considered that the optimum size for a keyboard laboratory would be to have a total 16 keyboards. He has taught classes of 12 for a number of years and has found that there have been few problems in monitoring the progress of a group of this size. He would see no particular problems in increasing the size of a class to 16 subjects. The field trial involved of four classes; two were made up of 12 subjects in each class and 2 had 6 subjects in each class. The author found that that the operation of the classes did not create difficulties provided that the classes were made up of subjects of similar ability and musical background. The one restriction would be that the existing room would not be big enough to cater for 4 extra keyboards.

When asked what they considered what the optimum size for a keyboard laboratory should be, the other college of education returns indicated that they felt it should be 15 (the average of numbers provided in the returns)¹⁷⁹ . The largest size came from the Auckland return (20) and the smallest from Hamilton and Dunedin returns(12) .

Survey of Keyboard Laboratories
New Zealand Colleges of Education
June 1993

Returns were received from all the Colleges of Education (Auckland, Palmerston North, Wellington, Christchurch and Dunedin) constituting an 100% return. The Music Department from the School of Education, the University of Waikato (formerly the Hamilton Teachers College) was also included in this survey. To avoid unnecessary repetition, the Colleges of Education and the University of Waikato will be referred to by their place name only (eg Palmerston North for the Palmerston North College of Education).

The survey collected information in two main areas. The first area (Section A) looked at the ways in which the keyboard laboratories were set up and the second (Section B) at the programmes offered.

The results of the survey will consist of a summary of each college's response and will be presented in the following order; Auckland, Waikato, Palmerston North, Wellington, Christchurch and Dunedin.

At the end of the summary of each question in both Section A and Section B of the survey, findings will be given based on the data received.

The original question from the survey is given in italics.

Section A

1. When was the keyboard laboratory established at your college?

Auckland	1973*
Hamilton	1992
Palmerston North	1988
Wellington	1980
Christchurch	1987
Dunedin	1986

- * The Auckland return stated that the keyboard laboratory was originally established at the North Shore Teachers College. This implies that the laboratory was transferred to Auckland Teachers College when the two colleges combined.

Findings

- 1 Keyboard laboratories are established in all the Colleges of Education (six returns)

2 Four of the laboratories were established within four years of each other, in the period 1985-1988. One (Auckland) was established seven years before the next earliest (Wellington) and one (Hamilton) five years after the second most recent one

2. *Have any modifications been made to the laboratory since it was initially established? If so, please indicate what they were.*

Auckland

The original Wurlitzer models were replaced by the Roland '20' model.

Hamilton

No changes.

Palmerston North

Gradual extension of numbers of keyboards.

Installation of specially designed tables for keyboards.

Wellington

One additional keyboard but not used in the laboratory.

Christchurch

Casio keyboards replaced by Yamaha TSR 75 model

Gradual increase in numbers of keyboards.

Dunedin

Introduction of 3 Casio organs to 12 electric pianos.

Findings

- 1 Laboratories modified since they were established (four returns).
- 2 Laboratories increased the number of instruments (three returns).
- 3 Laboratories diversified the type of instrument used (two returns).

3. *How many keyboards do you have in your laboratory?*

Auckland	17
Hamilton	10
Palmerston North	22
Wellington	7
Christchurch	13*
Dunedin	12

*Christchurch also has seven additional instruments that are portable but can be included in the laboratory if required.

Findings

- 1 The average number of instruments was 13.
- 2 The largest laboratory had 22 instruments and the smallest one had seven.
- 3 Laboratories had additional instruments that could be added to the laboratory if required (two returns).

The numbers quoted refer only to those instruments that are a permanent part of the laboratory.

4. *What brand of instruments do you use?*

Auckland

Roland '20' (14)
Yamaha P.S.S. L 80
Chrisfore 7000
Dueliton

Hamilton

Casio

Palmerston North

Roland 'Plus 20' (13)
Roland EP 3 (3)
Roland TP 50
Roland HS 60

Wellington

Roland

Christchurch

Yamaha PSR 75 (12)
Yamaha PSR 22 (4)
Roland HP 100 (2)
Juno Synthesizer (2)

Dunedin

Yamaha (3)
Roland (8)
Casio (1)

Findings

- 1 Laboratories with a majority of electronic pianos (four returns)
- 2 Laboratories had a majority of electronic organs (two returns).
- 3 Laboratories with both electronic pianos and organs (three returns).

5. *Why did you choose the particular instrument you use in your laboratory?*

Auckland

Cost factor
Convenience of servicing
Preference for 'piano keyboard rather than organ.

Hamilton

Versatility of sound
Cost factor
Appropriate length of keyboard
Suitable stands supplied.

Palmerston North

Cost factor
Felt it was more suitable than the electronic organ for developing keyboard skills, aided composition etc.

Wellington

The instruments were donated.

Christchurch

Cost factor
Frequent use of electronic keyboards in classrooms
Versatility of instrument (the Yamaha PSR has a very convincing piano tone).

Dunedin

Larger note range

Findings

- 1 A wide range of reasons was given.
- 2 A clear preference for the electronic piano (two returns).
- 3 A clear preference for the electronic organ (two returns).

6. *What sort of communication system do you use in your laboratory?*
Headphones, control panel etc.

Auckland

Two TL-12 units

Hamilton

Headphones
 No central control system.

Palmerston North

Demonstration keyboard, central panel, headphones and microphones.

Wellington

Headphones and a master keyboard (but not used much).

Christchurch

Headphones
 No central control system.

Dunedin

Roland teaching system.

Findings

- 1 Laboratories using a central control system, one used it intermittently (four returns).
- 2 Did not use a central control system (two returns).

7. *Why did you select the particular communication system you use in your laboratory?*

Auckland

Best option at time.

Hamilton

Available if needed.

Palmerston North

Appeared effective and appropriate to needs.

Wellington

Given to college.

Christchurch

Originally used a Roland system but now prefer to communicate without it.

Dunedin

It was ostensibly a Roland system.

Findings

- 1 Used the Roland system which includes a communication system(four returns).
- 2 Originally used a Roland communication system but now prefers to operate without it (one return).
- 3 Has a Roland communication systemavailable but does not choose to use it (one return).

8. *How do you arrange the keyboards in your laboratory? Please include a diagram in the space below.*

All colleges supplied diagrams. Diagrams and findings are included in an appendices at the end of the survey.

9. *What were your reasons for arranging the keyboards in the particular way you described in question 8 ?*

Auckland

Best use of teaching space

Hamilton

Space constraints

Palmerston North

Shape of room

Hands can be seen by the operator.

Wellington

To allow for other activities in the room.

Christchurch

Shape of room.

Allows for students to work in pairs.

Dunedin

Room shape

Line of sight.

Findings

- 1 Space considerations (five returns).
- 2 It is important to be able to see the student's hands (two returns).
- 3 It was important to have more space available for other activities in room.
- 4 It is important for the keyboards to be arranged in pairs (one return).

10. *What do you consider to be the optimum size for the keyboard laboratory? Please indicate why you feel this number is particularly suitable.*

Auckland

20

To cater for class sizes.

Hamilton

12

The maximum number in a group.

Palmerston North

16

Possible expansion to include computers but this would probably be based in a computer centre.

Wellington

15

Maximum for a group lesson.

Christchurch

16

To cater for class sizes.

Dunedin

12

Considered to be maximum size if individual help is to be given.

Findings

- 1 An increase in numbers was desirable(five returns).
- 2 Class sizes reason for increasing number of instruments (four returns).
- 3 The largest overall number was 20.
- 4 The largest increase was be from 7 to 15.
- 5 The existing number was most suitable (one return)

11. *Do you intend to modify your laboratory in the future? If so, please indicate what you plan to do.*

Auckland

Include more electronic keyboards (Yamaha).

Hamilton

Include taping facilities.

Palmerston North

Inclusion of computer facilities but based in a computer centre.

Wellington

Update existing keyboards.

Christchurch

Need a larger room to allow for computer and other facilities.

Dunedin

Like more 'organ style' *quality* instruments.

Findings

- 1 Indication of changes in the future (all returns).
- 2 Possibility of including computers (two returns).

12. *Please add any extra information concerning your keyboard laboratory that has not been accounted for in Section A of the survey.*

Auckland

Nil

Hamilton

Students are offered a choice of either a keyboard or a guitar course in basic curriculum courses.

Palmerston North

Nil

Wellington

Exploring computer-aided courses.
A wide use of courses to include A.S.T. and outpost courses.

Christchurch

Nil

Dunedin

Nil

Findings

1. Nil (four returns).

2. Additional information (two returns).

Section B of the survey looked at the actual programmes presented in the keyboard laboratories as well as at issues relating directly and indirectly to the programmes.

Section B

1. Why did you decide to install a keyboard laboratory in your music department?

Auckland

To teach basic keyboard skills.

To teach musicianship skills most suited to the keyboard eg harmony.

Hamilton

Installed to facilitate teacher trainees towards providing accompanist leadership for classroom programmes catering for half class numbers (of students).

The Hamilton return stressed that theirs was not a 'true' laboratory but rather a set of 10 keyboards operating on headphones.

Palmerston North

The perceived necessity for all students to have keyboard skills.

(a) for 'hands on' experience in making music in more than a 'single line' texture.

(b) for development of theory/compositional independence.

(c) for the development of general musicianship skills at the students' own level.

(d) encouragement of practical accompaniment skills for classroom/school use.

Wellington

Provided valuable opportunities for further development of trainees.
Valuable reinforcement in developing an understanding of music.

Wellington return noted that there was now less time for personal development because of the B. Ed. programme

Christchurch

Provides excellent opportunities for learning keyboard, accompaniment and general musicianship skills.

Dunedin

Accesses keyboard training for developing teachers.

Findings

1. The importance of developing musicianship skills.(4 returns)
2. The importance of developing accompaniment skills. (3 returns).
3. Other returns included areas such as 'developing an understanding of music and 'accessing keyboard training'.
4. What is a 'true' keyboard laboratory? (1 return)

2.What range of courses do you operate in your keyboard laboratory? Indicate what year group they were written for, if the course was for beginners or more advanced students, how many students take part, the total length of the course, how it is timetabled (eg once a week for one hour over a period of ten continuous weeks), a brief description of the course, its objectives and if it is a compulsory or optional course.

Courses will be identified by a capital letter (eg Course A). If for example you operate four courses, use the Course A,B,C and D outlines below.

Some returns referred to courses other than primary programme ones, these are outside scope of this survey.

Auckland

Course A

1st Year (Course is repeated)
 Beginner
 15 students
 1 hour a week (12 hours)
 Optional
 Basic keyboard, level one

Hamilton

Course A

1st Year(Course repeated 9 times)
 Mostly beginner
 8-10 students

1 hour a week for 1 semester (12 hours)
 Optional
 Beginner keyboard course.

Course B 1st Year

Mostly beginner (for bilingual trainees)
 30 students
 1 hour a week for 1 semester (12 hours)
 Optional
 Beginner keyboard course.

Course C 2nd Year

Beginner
 9 students
 1 hour a week for 1 semester (12 hours)
 Optional
 Beginner keyboard course.

Course D

1st, 2nd and 3rd year
 Beginner and Advanced
 30 students
 1 hour a week for 1 semester (12 hours)
 Optional
 Aims to further and develop existing skills.

Palmerston North

Course A (a)

1st year Subject Study and (b) Curriculum 3
 Beginner
 16 students
 (a) 40 minutes a week for 7 weeks.
 (b) 35 minutes a week for 3 weeks.
 Compulsory (but at students' own level)
 Beginner keyboard course.

Course B

1st, 2nd and 3rd Subject Studies (Curriculum 3)
 Near beginners
 Up to 16 students
 Time allocation as for Course A
 Compulsory (but at students' own level)
 Melody and harmony in basic keys, hand shifts.

Course C

1st, 2nd and 3rd Subject Studies (Curriculum 3)
 Moderately advanced
 Up to 16 students

Time allocation as for Course A
 Compulsory (but at students' own level)
 More advanced than Course B

Course D

2nd and 3rd Subject Studies (Curriculum 3)
 Advanced
 Up to 16 students
 Time allocation as for Course A
 Compulsory (but at students own level)
 Advanced keyboard skills

Course E

Subject Study 3
 Advanced
 Up to 16 students
 Time allocation as for course A
 Compulsory (but at students own level)
 Advanced keyboard skills

Course F

Subject Study 3
 Beginners in Year One.
 Approx. 10 students
 9 sessions of 40 minutes each.
 Compulsory
 Provides skills for the classroom.

Wellington

Course A

All year groups
 Beginner and Advanced
 7 students
 3 hours a week for a 6 week block
 Optional
 Advances keyboard skills according to the level of the student.

Course B

All year groups
 Advanced
 15 students
 2 hours a week for a 6 week block
 Optional
 Working in pairs using computer and synthesizer.

Christchurch

Course

A 2nd Year(Course repeated 6 times)
 Beginner
 Up to 12 students
 1 hour a week for twelve weeks.
 Optional
 Beginner keyboard course
 Uses childrens' songs for teaching materials.

Course B

2nd Year
 Advanced
 About 6 students
 I hour a week for twelve weeks.
 Optional
 Advanced keyboard class
 Classroom repertoire and advanced keyboard skills

Course C

Final Year
 Advanced
 Up to 12 students
 1 hour a week for 10 weeks.
 Optional
 Classroom repertoire and keyboard skills

Course D

Final Year
 Advanced
 Up to 12 students
 1 hour a week for 10 weeks
 Optional
 Classroom repertoire and advanced keyboard skills
 Course D is taken by students as a part of a year long course for students who intend being musical 'leaders' in the school.

Dunedin

Course A

Known as Mus 2 (Course repeated 5 times)
 Beginner
 12 students
 48 hours
 2 hours a week for 24 weeks or
 4 hours a week 12 weeks
 Optional
 Foundation musicianship

Course B Known as Mus 8

Advanced

3 - 8 students

12 weeks at 4 hours a week

Optional

Arranging, advanced chord work, song writing.

Course C

Known as Mus 18

Advanced (graduates of Course A)

8 - 10 students

12 weeks at 4 hours a week

Optional

Develops Mus 2 to more advanced levels.

Findings

Several pieces of information were requested in this question. The **findings** section addresses each issue on a separate basis and is therefore formatted in a different way to the other questions in the survey.

1. *Number of courses*

A total of 20 different courses were surveyed from six institutions

2. *Level of courses*

6 courses were for beginners.

3 courses were for near beginners.

2 courses were for both beginner and advanced.

1 course was for the modestly advanced.

8 courses were described as advanced.

3. *Number of students in courses*

There was a close correlation between the size of the laboratories at the respective colleges of education and the number of students in the courses (ref. Question 3, Section A of survey).

The **largest** number recorded was 30.

The **smallest** number recorded was 6.

The **average** size of all classes was 12.6 .

The average was calculated by adding all the numbers of students in classes (629) including all classes that were repeated and then dividing by the total number of classes (50).

4. *Length of courses*

- 5 courses were 5 hours and 25 minutes long
- 1 course was 6 hours long.
- 2 courses were 10 hours long
- 8 courses were 12 hours long.
- 1 course was 18 hours long.
- 3 courses were 48 hours long.

5. *Total Length of course*

- 2 courses lasted for 6 weeks.
- 1 course lasted for 9 weeks.
- 5 courses lasted for 10 weeks.
- 3 courses lasted for 12 weeks
- 8 courses lasted for one semester.
- 1 course lasted for 24 weeks (at 2 hours a week)*
- *also presented over 12 weeks (at 4 hours a week)

6. *Delivery of Course*

There was very considerable variation recorded, the most frequently used delivery was a 12 hour course delivered over a period of one semester (8 returns).

7. *Optional or compulsory*

- 14 courses were optional
- 6 courses were compulsory

8. *Objectives*

- 10 courses inclined towards developing keyboard skills,
- 10 courses inclined towards developing musicianship skills.
- 19 courses had elements of both keyboard and musicianship skills.
- 1 course was concerned with creativity using computers and synthesizers.

3. *Are any of the courses described in question 2 ongoing or continuing? (For example, A-B)*

Auckland

No

Hamilton

All

Palmerston North

A-B-C-D/E

Wellington

Students can take the courses at any stage provided they follow a sequence eg. 183/ 283/ 383

Christchurch

MU 201 and MU 301

Dunedin

Mus 2 and 18 (A-C)

Findings

1. Ongoing or continuing courses (five returns)

4. *Do you make use of published programmes in your keyboard courses? If so, please indicate which ones you use. refer to courses by code as in question 1 (A-G)*

Auckland

The Easiest Way to Play your Portable Keyboard, William A. Palmer, Thomas Palmer and Morton Manus. Alfred Publishing Co. California U.S.A. 1987 (A)

The Older Beginner Piano Course, Level One, James Bastion, Kjos West, San Diego, California 1977

Hamilton

Bastion piano series. Complete Keyboard series.

Palmerston North

The Older Beginner Piano Course, Level One, James Bastion, Kjos West, San Diego, California 1987 (A)

Musicianship, Levels One and Two James Bastien, Kjos West, San Diego, California 1988 (B)

Royal Schools of Music and other sources (C and D)

Wellington

Chimes Piano Books, 1 and 2 (A)

Christchurch

Ocus Pocus (C)

Dunedin

Alfred and Brimhall series

Findings

1. Published materials used in courses (six returns)
2. Bastion series (three returns)
3. Information related to question 1 (four returns)

5. Have you written your own programmes? If so, please indicate which ones using the code as in question one (A-G)

Auckland

Several years ago for an E.C.E. course.

Hamilton

Ideas and concepts for many courses developed in original format.

Palmerston North

Curriculum song book (C and D)
Improvisation course.

Wellington

Use a wide range of resources including a compilation of ideas from local teachers.

Christchurch

Own materials (A and B) with added materials from various song collections (ie A.C.Black series)

Dunedin

No, but use made of collated notes.

Findings

1. Original materials used (three returns)
2. Compilation of resources and ideas (three returns)
3. Use of supplementary materials (two returns)
4. Referred to Question 1 Code (two returns)

6. How do you cater for students who enter your courses with a variety of musical backgrounds?

Auckland

They can learn at their own level.

Waikato

The courses are sequentionally developed and students can start at their own level within the course.

Advanced keyboard players are given functional keyboard experience.

Palmerston North

Students identify their level and then work on units at their particular level. Tutor divides time between students working at different levels.

Wellington

Independent learning supported by tutor supervision.

Christchurch

Students are identified as beginners or as having had some background. They then take differently structured courses but, where possible, at seperate times.

Dunedin

Provides a variety of song material.
Given independent tasks eg song writing.

Findings

1. Differences of ability within the class using a variety of methods.
These included commencing the course at different points or being provided with materials appropriate to their level of development (six returns).
2. Groups reshuffled where possible so that students could learn with others of similar background (one return).

7. How do you cater for students who progress at different rates?

Auckland

They can work at their level but they get the same examination.

Hamilton

Same as for 6.

Palmerston North

Inevitable Less advanced students work as a group, more advanced work as a group for the first two or three sessions and then on an individual basis.

Wellington

Same as for 6.

Christchurch

Less advanced students progress as a group, more advanced work at their own level.

Dunedin

Achievement based tests are set for students to pass courses.

Findings

1. Provision was made for students who progress at different rates by providing appropriate materials (six returns).
2. All students in the same course were given the same examination at the end of the course(one return).
3. Achievement based tests (one return).

8. *Do you make use of cooperative learning in your keyboard programmes?*

Auckland

Not in a structured way but it happens.

Hamilton

Students share progress.

Palmerston North

It tends to happen as a matter of course.

Wellington

Yes (cites peer tutoring)

Christchurch

Not in a structured way.

Dunedin

Yes

Findings

1. Cooperative learning takes place (six returns).
2. Cooperative learning occurs but not in a structured way (four returns).
3. Did not elaborate, more information is required (one return).
4. Peer tutoring referred to (one return).

9. What do you consider to be the advantages of teaching keyboard skills using a keyboard laboratory compared with learning in a one-on-one situation? Please list in order of importance.

Auckland

1. Musicianship

Hamilton

1. Efficient use of teaching personnel
2. Students share and tend to motivate each other with their varied progress.
3. Able to do group participation

Palmerston North

1. The compactness of the group for group teaching enables the tutor to attend to individual needs while being sensitive for what happens in/for the rest of the group. It is a social activity without being overtly competitive.
2. The possibility of group activity and group learning /teaching.
3. The possibility of an on-the-spot audience for students at appropriate times.

Wellington

1. Opportunities for peer tutoring.
2. Can take more trainees.
3. Maximises tutor time.

Christchurch

1. Offers more students opportunities to acquire musicianship/ keyboard skills.
2. Makes good use of staff time and resource.
3. Provides opportunities for shared learning.

Dunedin

1. Economics
2. Social interaction
3. Ensemble playing

Findings

1. Three advantages given (five returns).
2. One advantage (one return).
3. No clear pattern emerged in 'the order of importance' part of the question.
4. Overall a number of similar answers were identified if not in the same order of priority including
 - (a) Efficient use of staff (four returns).
 - (b) Shared learning (four returns).
 - (c) More students can learn keyboards (two returns).

10. What do you consider to be the disadvantages of teaching keyboard skills using a keyboard laboratory compared with learning in a one-on-one situation? Please list in order of importance.

Auckland

1. Responding to individual needs.
2. Quality of sound of keyboards.

Hamilton

1. Not enough time to spend with each student.
2. Laboratory with consol prevents tutor from working alongside student.

Palmerston North

1. A keyboard laboratory is a blunt tool, suitable for 'gross' skills but not for teaching finer points of interpretation. Students sometimes feel frustrated with limitations of instruments.

Wellington

None given.

Christchurch

1. Finding enough time to help individuals.
2. Inferior quality of sound. Economics prevent purchase of instruments with superior sound.
3. Not possible to 'refine' sound.

Dunedin

1. Personal technique suffers.
2. Students tend to progress at class speed.

Findings

1. Three returns cited two disadvantages, one gave one, one gave three. There was also a nil return.
2. The lack of time/opportunity to assist individual students being the biggest disadvantage of teaching in a keyboard laboratory (two returns).
3. The quality of sound of the keyboards was seen as a disadvantage (two returns).
4. One return referred to a Roland electric keyboard and another to a Yamaha electronic organ (ref. Question 4 Section A of survey).

11. How do you assess the students who have taken part in your keyboard programmes?

Auckland

Ref. Syllabus for guitar, recorder, theory and aural, and voice examinations. All examinations are marked out of 100. the pass mark being 50.

Hamilton

Three forms of assessment used for (different) courses; grade related, value added and Pass/Fail based on value added assessment and progress and achievement.

Palmerston North

Grades are awarded from D to A+. The return includes a detailed account of how marks, levels and grades are interrelated.

Wellington

Progress from base-line skills at entry is measured student and tutor assess and evaluate course together.

Christchurch

Grades are awarded. Passes are either at A,B or C level and are based on set criteria.

Dunedin

Graded on all aspects of course. Regular review of keyboard playing.

Findings

1. A system involving grading was used (three returns).
2. Criteria based assessment (one return).
2. A Pass/Fail system(one return).
3. Marks out of 100 (one return).
4. A system where progress was related to base-line skills on entry to course and assessment resulted after a process of consultation between the tutor and the student(one return).

12. *How do you evaluate your keyboard programmes?*

Auckland

Student evaluation of total programme including keyboard programme.

Hamilton

Self evaluation
 Student evaluation
 Evaluation of student response.

Palmerston North

Self evaluation
 Student feed-back and suggestions.

Wellington

Student evaluation
 Staff discussion

Christchurch

Self evaluation
 Student evaluation

Dunedin

Student evaluation

Findings

1. Student evaluation (all returns)
2. Self evaluation (three returns)
3. Staff discussions (one return)

13. Are any of your programmes directed towards providing training for students who may wish to teach in primary school keyboard laboratories?

Auckland

No

Hamilton

No

Palmerston North

Partially covered in courses.
 M.O.M.S.E. run courses.

Wellington

Not specifically, option available.
A.S.T. courses do address this.

Christchurch

Partially covered in courses.

Dunedin

Not specifically repertoire reflects this. 90% of students see it that way if laboratories are available.

Findings

1. 'No' replies (two returns).
2. This area covered partially although this was not the specific aim of the course (two returns).
3. A specific example of a course (one return).

14. Please add any extra information concerning your keyboard laboratory programmes that has not been accounted for in Section B of this report.

Auckland

A great need for Student Books/Methods, the published ones all have their limitations.

Less use being made of laboratory intercom. system, preference for working alongside a student.

Hamilton

Length of courses create problems, one semester means that there may be a full semester before another course is available, a lot may be forgotten in the interim period.

Lack of opportunity for some students, only one semester course available for complete period of training.

Palmerston North

Nil

Wellington

Reduced time with B Ed. programme will mean much less time to meet individual needs.

Christchurch

Need for texts that meet the needs of students.

Need for year long courses to provide continuity of learning.

Dunedin

Nil

Findings

1. Nil (three returns)
2. Need for more suitable material (texts) cited (two returns).
3. Need for more opportunities for continuity in courses cited (two returns).
4. Less need for communication systems (one return).

In Appendices II and III, a 5 point scale is used to indicate subjects' responses, 1 is a negative indicator and 5 a positive indicator. Data collected from the two questionnaires will be found in Chapter IV of the study. ¹⁸⁰

The original questionnaires to the subjects included a descriptor at each end of the 5 point scale. The descriptors will be found in Chapter IV of the study at the bottom of each figure relating to the questionnaire.

APPENDICES-II

Data

Control Group/Field Trial

Questionnaire

1. Returns Total 18 (100% return)

2. Musical background

Did you play an instrument before commencing this course?

Yes 17 No 1

Three instruments 1

Two instruments 9

One instrument 7

No instrument 1

Specify instrument(s)

11 Recorder

Guitar 7

Piano 3

Violin 3

Cello,clarinet, organ and tenor horn 1

How long ago did this take place?

Years	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	8	3	2	1	2					1		1	1		2		2			1	1

How many years did you learn the instrument for?

Years .5 1 2 3 4 5 6

7 5 2 2 6 3 1

Were you able to read music on entry to the course?

Yes 10 No 5 Not sure 2 N R

How would you rate your reading skills on entry to the course?

1	2	3	4	5
3	1	4	1	5
			1	2

One reply did not indicate a level ("treble clef only")

Add any further information not already covered in the question.

Read treble clef only 2

Other (1 each)

Self taught, reading skills forgotten, Stage One 'Varsity.

3. Reasons for taking this course rather than the guitar option.

Wanted to play the keyboard. 7

Felt that they were not good at playing the guitar. 6

Felt that they already played the guitar well. 3

More variety offered in keyboard course. 3

Use of keyboard in the classroom. 2

Reading skills 2

Other (1 each)

Playing skills, the tutor, suitability of course for beginners, more enjoyable than guitar.

4. At the end of the field trial period did you feel that you were able to

Play at least two pieces of music (right hand)?

1	2	3	4	5
0	0	0	1	5
				1
				11

Play at least two pieces of music (both hands)?

1	2	3	4	5
2	1	4	1	4
				6

Play more than two pieces of music (both hands)?

1	2	3	4	5
4	1	6	2	5

How many pieces altogether?

4	5	6	7	more
2	0	4	1	1

NR 8

Did you feel that your reading skills improved during the trial?

1	2	3	4	5
0	2	3	5	7

NR 1

5 *Did you feel that your attitude to the course changed during the field trial period?*

At entry

1	2	3	4	5
0	1	5	3	1 8

At the completion of the field trial period

1	2	3	4	5
0	0	0	4	1 13

Change downwards 0

No change

9
4-4 1
4.5-4.5 1
5-5 8

Change upwards

Up one point

4
3-4 2
4-5 2

Up two points

4
2-4 1
3-5 3

6. *How appropriate were the contents (modules) used in the field trial?*

1	2	3	4	5	
0	0	2	2	1	13

7. *Please comment on the delivery of the programme.*

1	2	3	4	5	
0	0	0	1	1	16

8. *How important was the role of the tutor to you in the learning process?*

1	2	3	4	5	
0	1	3	3	1	10

9. *Did you find that learning to play the keyboard caused you any anxiety?*

1	2	3	4	5	
5	10	1	1	1	

10. *Please add any comments you may care to make that have not already been covered in the above questions.*

High quality of tutor(ing)	8
Appropriate style of teaching	4
Feeling of achievement	4
High quality of course	3
Wider range of materials	2
Other (1 of each)	

Small group was appreciated, effectiveness of test sheets, would have liked a faster pace, wide range of music, frustration in comparing ones own ability with that of others.

APPENDICES-III

Data

Experimental/Group

Questionnaire

1. Returns Total 17 out of 18 (94.44% return)

2. Musical background

Did you play a musical instrument before commencing the course?

Yes 12 No 5

Two instruments 5

One instrument 7

No instrument 5

Specify instrument(s)

Recorder 5

Guitar 6

Piano 3

Keyboard, organ and 'cello 1

How long ago did this take place?

Years 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

6 1 1 1 3 2 1 1

How many years did you learn the instrument for?

Years .5 1 2 3 4

2 8 2 3 2

Were you able to read music on entry to this course?

Yes 10 No 7

How would you rate your reading skills on entry to the course?

1	2	3	4	5
3	10	3	1	0

Add any further information not already covered in the question.
(1 of each)

Self taught, doing a theory of music course, feel confident at beginner level.

3. Reasons for taking this course rather than the guitar option.

Wanted to play the keyboard.	10
Felt that they already played the guitar well.	4
Felt that they were not good at playing the guitar	2
Other (1 each)	
Playing skills, one also learning the guitar.	

4. At the end of the field trial period did you feel you were able to

Play at least two pieces of music (right hand)?

1	2	3	4	5
0	0	0	2	1
				14

Play at least two pieces of music (both hands)?

1	2	3	4	5
0	0	3	6	8

Play more than two pieces of music (both hands)?

1	2	3	4	5
0	0	1	4	6
				6

How many pieces altogether?

3	4	5	6	7
3	4	1	2	1

Did you feel that your reading skills improved during the field trial period?

1	2	3	4	5
0	0	3	1	12

5. *Did you feel that your attitude to the course changed during the field trial period?*

On entry.

1	2	3	4	5
0	0	5	6	7

At the completion of the field trial period.

1	2	3	4	5
0	0	0	1	15

1 NR

Change downwards 0

No change 7

4-4 1

5-5 7

Change upwards *Up one point*

4-5 4

Up two points

3-5 4

6. *How appropriate were the contents (modules) used in the field trial?*

1	2	3	4	5
0	0	0	1	16

7. *Please comment on the delivery of the course.*

1	2	3	4	5
0	0	0	0	17

8. How did you feel the cooperative instrumental programme compared with a totally tutor directed one (as in your Year One Instrumental)?

1	2	3	4	5	
	0	0	1	2	14

9. How important was the role of your field-trial partner (as the teacher) to you in the learning process?

1	2	3	4	5	
0	0	0	13	4	

10. How important was the role of your field-trial partner (as the one being taught)?

1	2	3	4	5	
0	0	3	11	3	

11. In your role of teacher did you feel that you were adequately briefed?

1	2	3	4	5	
0	0	2	5	10	

12. In your role of the one being taught, did you feel that you were adequately briefed?

1	2	3	4	5	
0	1	0	2	14	

13. Do you feel that you and your field-trial partner were given adequate opportunities to consult with the tutor?

1	2	3	4	5	
0	0	1	1	15	

14. Do you feel that you and your field-partner were given adequate opportunities to consult/debrief with each other?

1	2	3	4	5	
0	1	1	0	15	

Debrief	0	1	1	1	14
---------	---	---	---	---	----

15. How important was the role of the tutor to you in the learning process?

1	2	3	4	5	
0	1	0	4	1	11

16. *Did you find that having two teachers (your tutor and your partner) created any difficulties in the learning process?*

1	2	3	4	5
0	0	0	0	17

17. *List three advantages (in order of importance) you see in learning to play the keyboard in a cooperative learning mode.*

No. 1

Mutual support and encouragement

(8 "1st" returns, 5 "2nd" returns)

No. 2

Positive and non-threatening atmosphere

(5 "1st" returns, 2 "2nd" returns, 3 "3rd" returns)

No. 3

Two (supporting) teachers

(3 "2nd" returns)

Also mentioned

Better understanding, no feelings of failure, reinforcement of students, learning how to teach someone else, better way to teach the basics, enjoyment, programme structure, revision of skills, improved role of teacher, allowed to talk in class.

18. *List three disadvantages (in order of importance) you see in learning to play the keyboard in a cooperative learning mode.*

No. 1

(Equal first)

Possibility of being held back by a partner.

Possibility of partner not teaching correctly.

(2 "1st" returns)

No. 2

Partners should be of the same level of ability.

(1 "1st" return, 1 "2nd" return)

Also mentioned (all single returns

What happens if your partner is away? The feeling of not being as good as your partner, possibility of conflicting information provided by the two teachers.

No Returns

9

19. *Do you feel that you would use a cooperative style of learning to teach children to play a musical instrument in your classroom?*

1	2	3	4	5
0	2	3	10	3

20. *Did you find that the process of learning to play the keyboard caused you any anxiety?*

1	2	3	4	5
8	8	0	0	1

21. *Please add any comments you may care to make not already covered by the above questions.*

(High) quality of tutor(ing)	9
------------------------------	---

Positive comments about cooperative learning	4
--	---

High quality of course	4
------------------------	---

Increased confidence	2
----------------------	---

Feeling of achievement	2
------------------------	---

Not enough time (because of late release from previous class)	2
---	---

Other (1 of each)	
-------------------	--

Advantage of learning in a small group, problems with dictations.	
---	--

Appendices 1V

Field Trial Programme

BEGINNER KEYBOARD OPTION

MODULE ONE

* Areas of the modules have been shaded in. These areas were not available to the learning partner in the Experimental Group.

MODULE ONE

Module One

- introduces the electronic keyboard.
- provides directions on correct posture.
- revises and/or extends basic reading skills.
- enables you to perform at least three melodies.
- commences a short course on ear training.

The keyboard used for this course is the Yamaha PS 75 model.

The function mode to be used is the 00 mode (piano).

You will be given instructions on how to operate the keyboard and earphones at the start of the module.

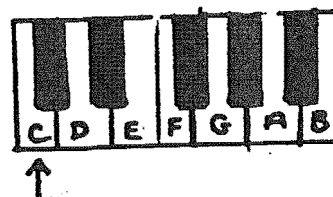
Activity One/Ear training

*In keyboard playing, the right hand thumb is known as **one**, the first finger **two**, the second finger **three**, the third finger **four** and the little finger **five** (diagram one).*

Diagram One



Diagram Two



Place your right hand on the keyboard so that your thumb (**one**) is on Middle C (diagram two).

Repeat the pattern of notes that you hear.

Place your right hand first finger (**two**) on the white note, D to the left of Middle C.

Repeat the pattern of notes that you hear.

Place **three** on E next to D and repeat the pattern of notes that you hear

In the same way place **four** on F (beside E) followed by **five** on G (beside F), there will be a separate pattern of notes played for both F and G

Five more patterns of notes will now be played. Each pattern will be played twice. The second time may be the same as the first or it may be different. Record on your Module Task Sheet an "S" if you think that the patterns are the same or a "D" if you think that they are different.

Activity Two/ Theory of Music

Each note is given a *fraction* name as follows

the crotchet (♩), a **quarter** note ($\frac{1}{4}$).

the minim (♪), a **half** note ($\frac{1}{2}$).

the dotted minim (♩.), a **three-quarter** note ($\frac{3}{4}$).

the semi-breve (♩), a **whole** note ($\frac{4}{4}$).

Music is divided into bars, each bar is separated from the next bar by a bar line and the final bar has a double bar line as in example below.



At the beginning there is a **time signature**.

The top number tells us how many *beats* there are in a bar.

The bottom number tells us how *long* the beats are. In this example there are four quarter note beats in each bar.

The example above has four bars. Each bar contains a different pattern of notes. If you add up the fraction value of the notes in each bar you will find that the total is the same as the time signature.

Now play this rhythm on the note Middle C using **one** in the right hand.

The next example has a different time signature. What does the top number tell us this time? What is the length of each beat? How many bars of music are there altogether? Record your answers in your Module Task Sheet.



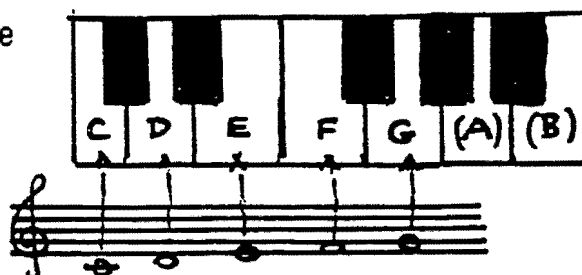
Now perform this rhythm on "D" using **two** in the right hand.

Activity Three/Playing melodies.

So far we have performed *rhythms*, using only one note. *Melodies* rise and fall thus requiring more than one note.

In Activity One we identified our fingers by numbers and then performed a series of rhythms using each finger on a different note. Diagram Three shows where each note is written on the **treble clef** (G). The treble clef is used to write down music using higher registers (or, higher sounds)

Diagram Three



In your Module Task Sheet, you will find a quarter, half, three-quarter and a whole note written on the middle C line. Repeat this pattern for the following notes; D, E, F and G writing the notes on the appropriate line or space.

In the early stages of keyboarding the finger that is required to play the note is often written above the note. However, it is most important to learn the names of the lines and spaces in the treble clef so that you do not have to rely too much upon fingering indicators and learn to read the music itself.

Perform the following rhythms which are written in the treble clef.



You will note that we only performed rhythms using the notes C, D and E. The same principles would also apply for F and G.

Here are three melodies. You will note that some fingering has been added, you may put in the remaining fingering if you wish but not before you have tried to play it with only the fingering given! Please indicate when you are ready to perform all three pieces.

"Opus One"



"Turn on the Sun"



"Pease Pudding"



Activity Four/Theory Check Point One

You will find a series of questions based on the theory of music in your Module Task Sheet. When you have completed the questions, return the sheet and then work on the Extension pieces until the end of the class.

Activity Five/Extension

Two further pieces; check each one with John Emeleus before going to the next one.

"Waltz"



"Happy Days"



Field Trial Programme

BEGINNER KEYBOARD OPTION

MODULE TWO

Module Two

- revises and/or extends basic reading skills.
- introduces sight reading.
- continues with ear training.
- extends performance repertoire.

Activity One/Revision

"Opus One", "Turn on the Sun" and "Pease Pudding".

Play each piece through twice, check both notes and timing.

Activity Two/Ear Training

Five short patterns of notes using Middle C (one) and D (two) will be played twice. Play back after the *second* hearing.

Five further patterns of notes will be played still using C and D. Each pattern will consist of five notes and will be played twice. One note will be altered when the pattern is played for the second time. Record in your Module Task Sheet which note has been altered by using a number between one and five. If, for example, the second note is altered, record a 2.

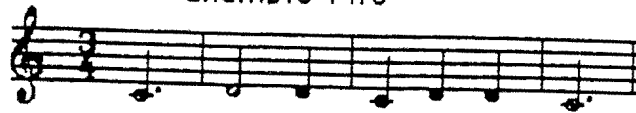
Activity Three/Sight Reading

Sight reading is the skill of being able to play music after a quick read through. This is an important skill that will both develop and extend your reading skills.

Fingering is not given. All examples will start and finish on Middle C. In Module Two, only C and D will be used.

Read through the music, place your fingers on the key and silently finger the music. Then, next time, play it 'live'. Concentrate on accuracy of notes and note lengths. Try to keep a steady speed throughout.

Example One



Activity Four/Theory

Your sheet task sheet from Module One will be returned.

Quavers (eighth notes) are usually written in pairs (see Inset 1). Quavers last half as long as crotchets (quarter notes).

Play the following rhythms on Middle C (one=thumb)

Inset One

• = quarter note

•• = eighth notes usually written

1 $\frac{4}{4}$ ♩ ♩ ♩ ♩ ||

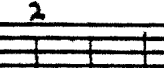
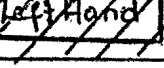
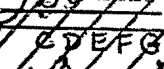
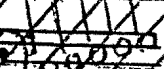
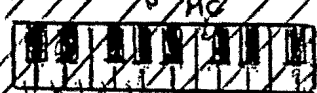
2 $\frac{4}{4}$ ♩ ♩ ♩ ♩ ||

3 $\frac{4}{4}$ ♩ ♩ ♩ ♩ ||

Inset Three

Music sometimes has two beats in the bar (inset 2). Play the following examples on Middle C (one=thumb).

Bass Clef



1 $\frac{2}{4}$ ♩ ♩ ||

2 $\frac{2}{4}$ ♩ ♩ ||

Inset Two

2 two beats

4 in bar

Each beat worth ♩ ($\frac{1}{4}$)

Activity Five/Playing Melodies

Here are three melodies. you will note that some fingering has been added, you may put in the remaining fingering if you wish but not before you have tried to play it with the fingering given! Please indicate when you are ready to perform all these pieces.

"Aunt Rhody"



"Turn on the Sun"

Handwritten musical score for "Turn on the Sun". The score is written on two systems of staves. The first system consists of a single staff with notes and rests, and a second staff with chords and rests. The second system is similar but shorter. Above the first staff, measures are numbered 1, 2, 3, and 4. Below the first staff, there are three sets of numbers: 1 3 5, 1 2 4, and 1 2 5, which appear to be fingerings or scale degrees. The notation includes eighth notes, quarter notes, and rests.

"Peter's New Shoes"

279



"Swing Along"



Activity Six/Theory Check Point Two

You will find a series of questions based on the theory of music in your Module Task Sheet. When you have completed the questions, return the sheet and then work on the Extension pieces until the end of the class.

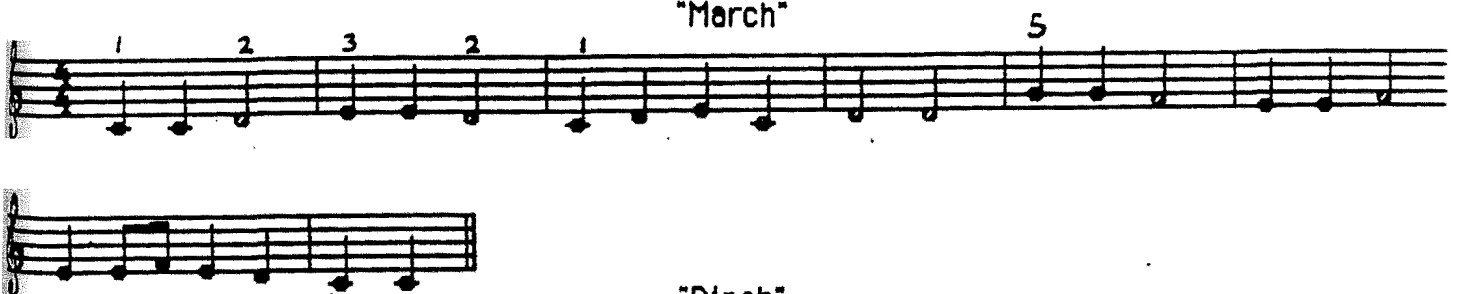
Activity Seven/Extension

Three further pieces; check each one with John Emeleus before going on to the next one.

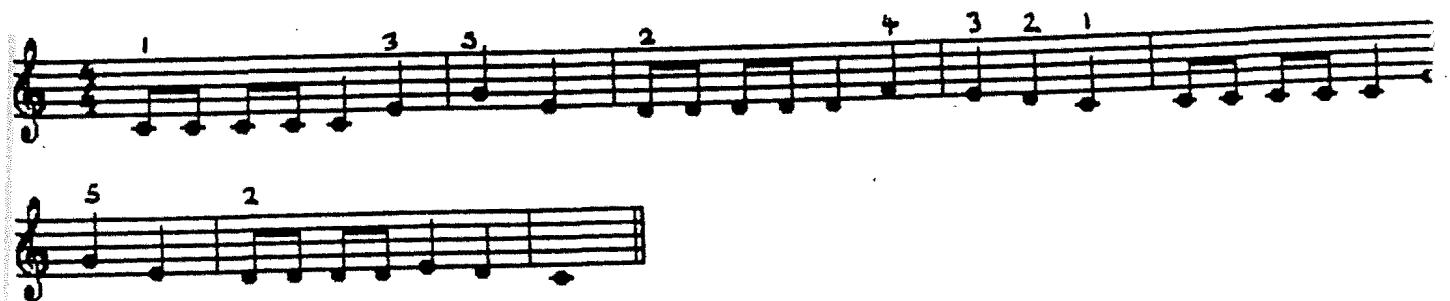
"Who's That?"



"March"



"Dinah"



Field Trial Programme

BEGINNER KEYBOARD OPTION

MODULE THREE

MODULE THREE

Module Three

- revises and/or extends reading skills.
- introduces dictation.
- continues with sight reading and ear training.
- extends performance repertoire.

Activity One/Revision

"Turn on the Sun" and "Aunt Rhody"

Play each piece through twice, check both notes and timing.

Activity Two/ Ear Training

Five short patterns using Middle C (one), D (two) and E (three). will be played twice. Play back after the *second* hearing.

Five further patterns of notes will be played using C, D and E. Two notes will be altered when the pattern is played for the second time. Record in your Module Task Sheet which note has been altered by using a number between one and five. If, for example, the third and fourth notes are altered, record 3 4.

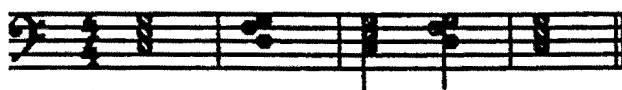
Activity Three/Sight Reading

Read through the following examples, finger the notes if you wish but do not play through until directed.

1.





2.





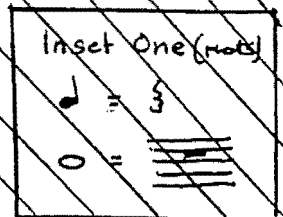
Activity Four/Theory

Your task sheet from Module Two will be returned.

Rests are an important part of written music.
Two rests are introduced in Module Three.

The quarter note rest () lasts as long as the quarter note ()

The whole note rest () lasts for a complete bar (or )



Play the following two examples. The first is written in the treble clef whilst the second is written in the bass clef, both contain rests.



Activity Five/Playing Melodies

The following two melodies are written for both hands. Note that the rests occur only in "The Grand Old Duke of York" and in the bass clef (left hand).

"Aunt Rhody"



"The Grand Old Duke of York"

Musical score for "The Grand Old Duke of York". The score is written for two staves. The first staff contains a melody with notes and rests, with fingerings 3, 2, 1, 2, and 3 indicated above it. The second staff contains a bass line with notes and rests, with fingerings 1, 3, 5, 1, 2, 4, and 3 indicated below it. The score is divided into measures by vertical bar lines.

Activity Six/Theory Check Point Three

You will find a series of questions based on the theory of music in your Module Task Sheet. When you have completed the questions, return the sheet and then work on the Extension pieces until the end of the class.

Activity Seven/Extension

Two further pieces, check with John Emeleus before going on to the next one.

"Au Clair de la Lune"

Musical score for "Au Clair de la Lune". The score is written for two staves. The first staff contains a melody with notes and rests. The second staff contains a bass line with notes and rests. The score is divided into measures by vertical bar lines.

"Trumpets"

Musical score for "Trumpets". The score is written for two staves. The first staff contains a melody with notes and rests. The second staff contains a bass line with notes and rests. The score is divided into measures by vertical bar lines.

Field Trial Programme

BEGINNER KEYBOARD OPTION

MODULE FOUR

MODULE FOUR

Module Four

- revises and/or extends reading skills.
- continues with sight reading and ear training.
- introduces dictation of rhythms.
- extends performance repertoire.

Activity One/Revision

"Turn on the Sun" (Module Two) and "The Grand Old Duke of York" (Module Three)

Play each piece through twice, check both notes and timing.

Activity Two/ Ear Training

Five short patterns using Middle C ,D, E and F.
Each pattern will be played twice. Play back after the *second* hearing.

Dictation

Two short rhythms (each two bars long) will
be played twice. Record what you hear in your
Module Task Sheet.

Activity Three/Sight Reading

Read through the following examples, finger the notes
if you wish but do not play through until directed.

Example One



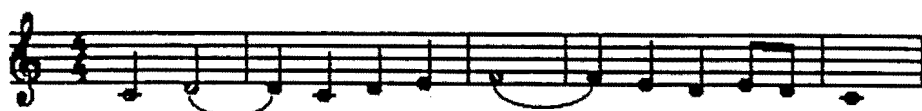
Example Two



Activity Four/Theory

Your task sheet from Module Three will be returned.

Tied notes are introduced in this module. Tied notes are required when it is necessary for a note to be extended into the next bar. Note that the tie only joins two notes of the same pitch level and that the tie is written with the curve moving *away* from the direction of the stems of the notes as in the following two examples.



Activity Five/Playing Melodies

The following melody contains a number of tied notes. Make sure that you give each tied note its correct value.

"The Saints"



Activity Six/Theory Check Point Three

You will find a series of questions based on the theory of music in your Module Task Sheet. When you have completed the questions, return the sheet and then work on the Extension pieces until the end of the class.

Activity Seven/Extension

Two further pieces, check with John Emeleus before going on to the next one.

The Banks of the Ohio

The musical score for 'The Banks of the Ohio' is presented in three systems, each with a treble and bass staff. The key signature has one sharp (F#), and the time signature is 4/4. Fingerings are indicated by numbers 1-5 above notes. Ornaments (vertical lines) are placed above notes in measures 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632, 634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836, 838, 840, 842, 844, 846, 848, 850, 852, 854, 856, 858, 860, 862, 864, 866, 868, 870, 872, 874, 876, 878, 880, 882, 884, 886, 888, 890, 892, 894, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 922, 924, 926, 928, 930, 932, 934, 936, 938, 940, 942, 944, 946, 948, 950, 952, 954, 956, 958, 960, 962, 964, 966, 968, 970, 972, 974, 976, 978, 980, 982, 984, 986, 988, 990, 992, 994, 996, 998, 1000.

Field Trial Programme

BEGINNER KEYBOARD OPTION

MODULE FIVE

MODULE FIVE

Module Five

- revises and/or extends reading skills.
- continues with sight reading, ear training and dictation of rhythms
- extends performance repertoire.

Activity One/Revision

"Turn on the Sun" (Module Two), "The Grand Old Duke of York" (Module Three) and "The Saints" (Module Four)

Play each piece through twice, check both notes and timing.

Activity Two/ Ear Training

Five short patterns using Middle C ,D, E, F and G
Each pattern will be played twice. Play back after the *second* hearing.

Dictation

Two short rhythms (each two bars long) will be played twice. The rhythms will include the crotchet rest. One rhythm will be in quadruple time (four beats in the bar) whilst the other will be in triple time (three beats in the bar). Record what you hear in your Module Task Sheet.

Activity Three/Sight Reading

Read through the following examples, finger the notes if you wish but do not play through until directed.

Example One



Example Two



Activity Four/Theory

Your task sheet from Module Four will be returned.

~~Module 5 introduces the quarter note with a dot after it.~~

~~A dot after a note increases its value by half as much again.~~

~~Example~~



Activity Five/Playing Melodies

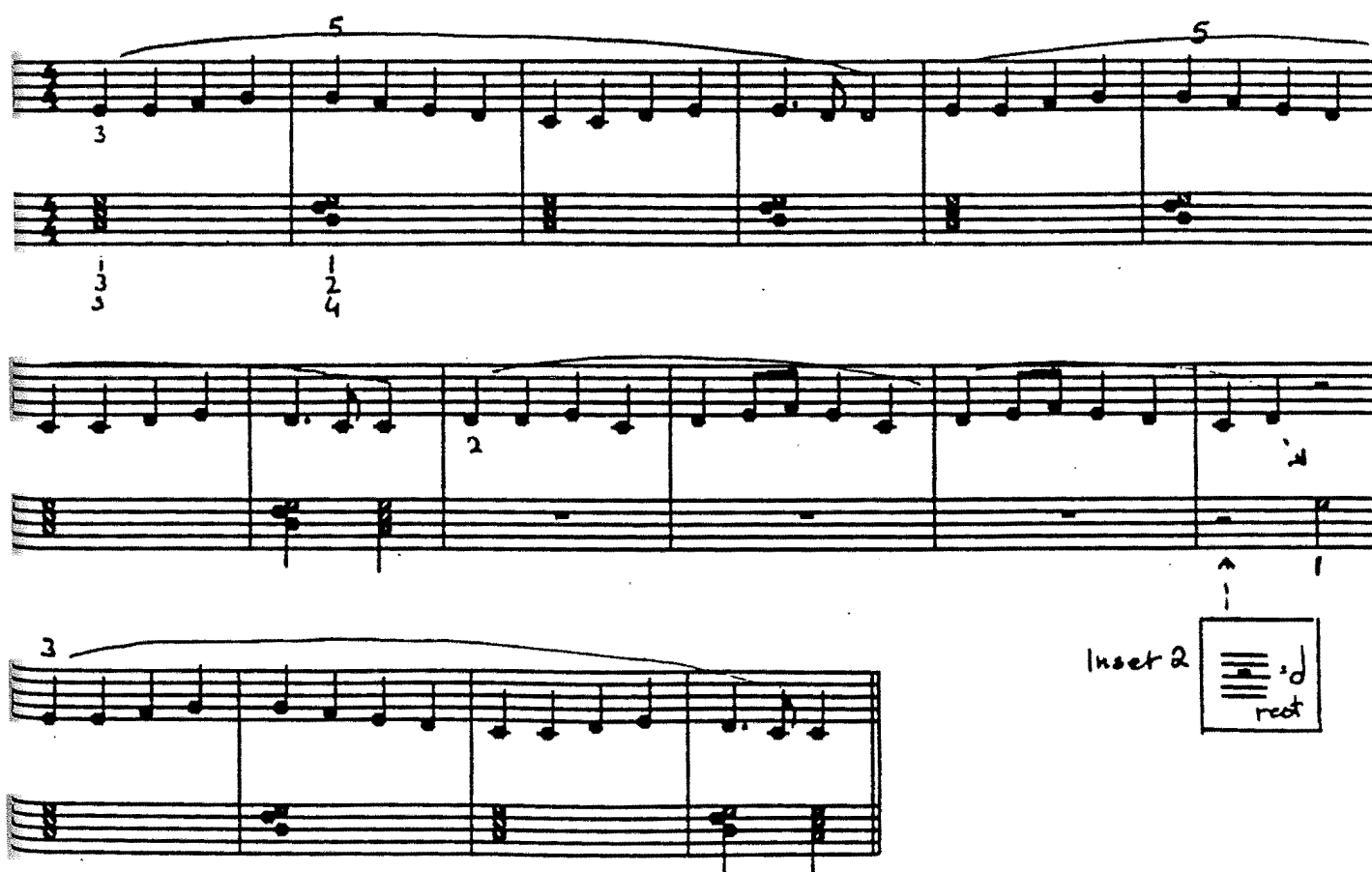
The following melody contains a number of dotted quarter notes. Make sure that you give each note its correct value. Note that the melody goes into the base clef/left hand at bar 12.

Inset I

lines can
not be
phases
marks

"Ode to Joy"

Beethoven



Activity Six/Theory Check Point Four

You will find a series of questions based on the theory of music in your Module Task Sheet. When you have completed the questions, return the sheet and then work on the Extension piece as well as revising "Turn on the Sun" and "The Grand Old Duke of York" until the end of the class.

Activity Seven/Extension

"Waltz"

The musical score for "Waltz" is written in 3/4 time and consists of three systems of staves. The first system has a melody on the upper staff and a bass line on the lower staff. The melody starts with a half note G4, followed by a quarter note A4, and then a quarter note B4. The bass line starts with a half note G2, followed by a quarter note A2, and then a quarter note B2. The second system continues the melody and bass line. The third system concludes the piece with a final measure containing a half note G4 and a half note G2. Fingerings are indicated by numbers 1 through 5 below the notes.

APPENDICES V

FIELD TRIAL PROGRAMME

Worksheets: Modules One to Five

Name _____ Tutor Group _____

MODULE ONE TASK SHEET

Activity One

The same or different?

Write an "S" if you think that the rhythms are the same.

Write a "D" if you think that they are different.

1 2 3 4 5

Activity Two

What does the top number mean?

What is the length of each beat?

How many bars are there in the music?

Activity Three

A quarter, half, three-quarter and whole note are written on the Middle C line, repeat the same pattern for D, E, F and G.

C

D

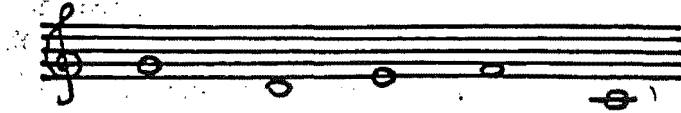
E

F

G

Activity Five

1. Give letter names for the following notes.



2. Insert the following notes on the staff below.



3. Add notes to complete the following bars.



Please return to John Emeleus at the end of the lesson.

Name _____ Tutor Group _____

MODULE TWO TASK SHEET**Activity Two**

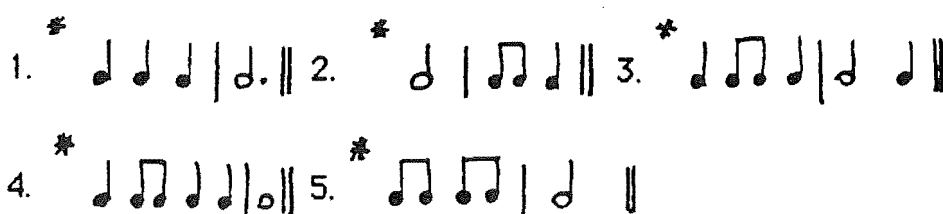
Which note has been altered?

Using numbers one to five, record which note has been altered when the pattern has been played for the second time. If, for example, the second note is altered, record a 2.

1. 2. 3. 4. 5.

Activity Six/Theory Check Point Two

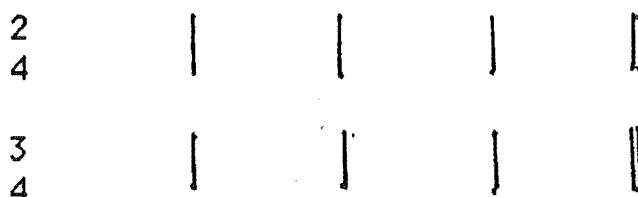
1. Put in time signatures at the points marked with a *.



2. Give both the letter name and the fraction value of the following notes.



3. Add notes to complete the following.



Please return to John Emeleus at the end of the lesson.

Name _____ Tutor Group _____

MODULE THREE TASK SHEET**Activity Two**

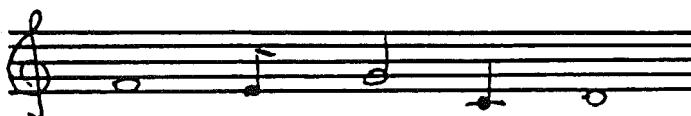
- Which notes have been altered?
- A group of five notes will be played.
- The notes will be played for a second time with two alterations.
- Record which notes have been changed by using numbers from 1 to 5. For example, if the second and fourth notes are altered, record 2 4.

1. 2. 3. 4. 5.

Activity Six/ Theory Check Point Three

1. Give the letter name and fraction value of the following notes.

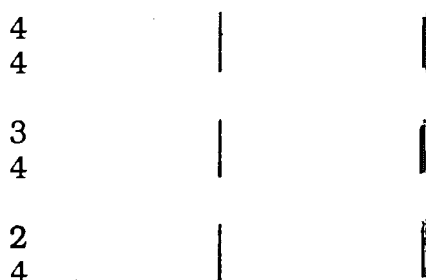
Treble clef



Bass clef

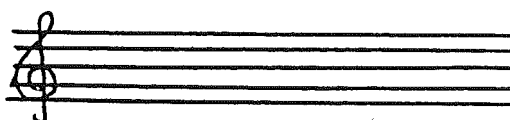


2. Add notes and rests (quarter note rest) to complete the following. Each example should contain two rests.



3. On the treble clef write

- a G (quarter note)
- an E (three quarter note)
- Middle C (whole note)
- a D (half note)
- an F (quarter note)



Please return to John Emeleus at the end of the lesson.

Name _____ Tutor Group _____

MODULE FOUR TASK SHEET

Activity One

Dictation Each example will be played twice.

(1)



(2)



Activity Six

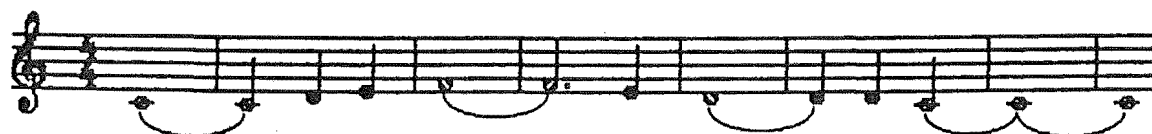
Theory of Music

1 Tied notes.

In the following example

(1) Draw a circle round the tied notes.

(2) Indicate how many beats the tied note lasts for.
Put the number inside the circle.



2. Put in the bar lines in the following examples. They should be four bars long.

(1) $\frac{3}{4}$ 

(2) $\frac{2}{4}$ $G_4 \ A_4 \ B_4 \ C_5 \ D_5 \ C_5 \ B_4 \ A_4 \ G_4 \ F_4 \ E_4 \ D_4 \ C_4$

(3)

Name _____ Tutor Group _____

MODULE FIVE TASK SHEET

Activity One

Dictation Each example will be played twice.

(1)

4
4

(2)

3
4

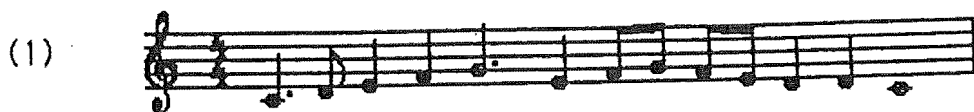
Activity Six

Theory of Music

- 1 Insert the names of the notes and the fingers you would require to play them with.



- 2 Put in the bar lines in the following examples. They should be four bars long.

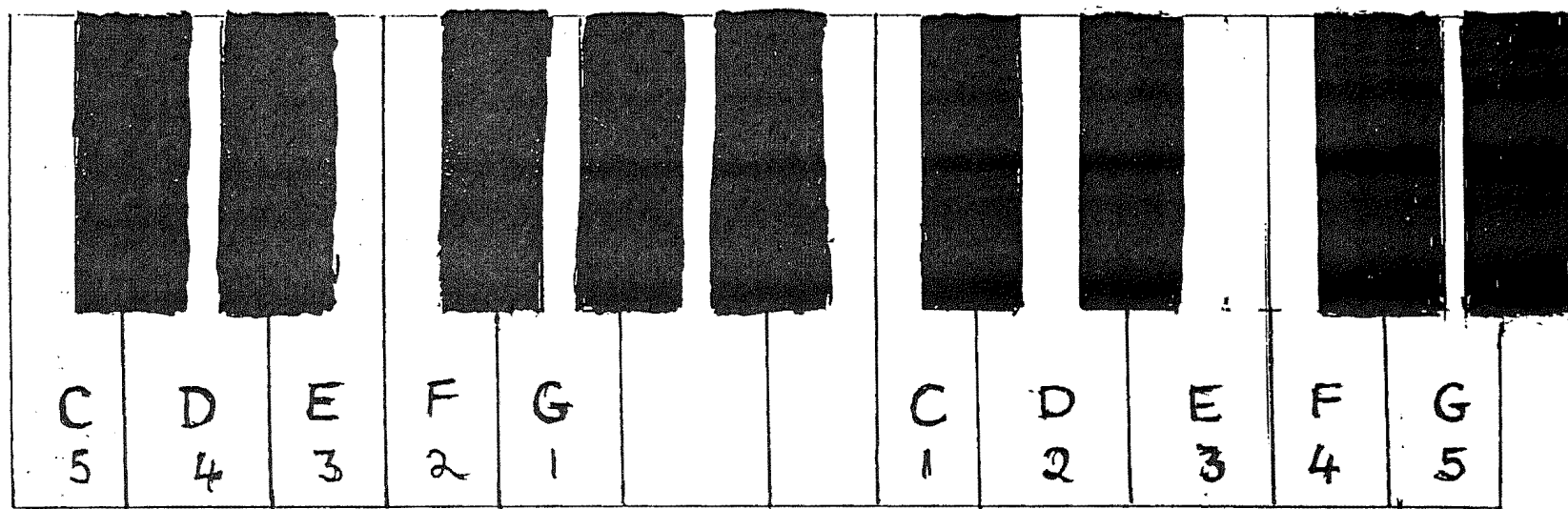


APPENDICES VI

FIELD TRIAL PROGRAMME

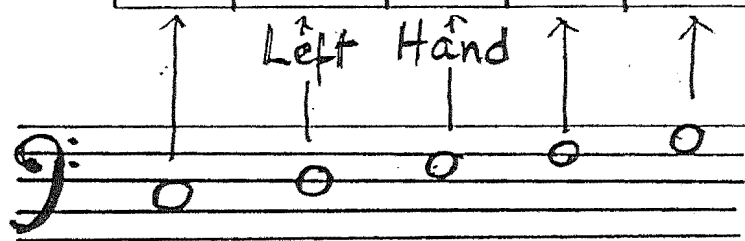
Support Materials: Modules One to Five

Middle C

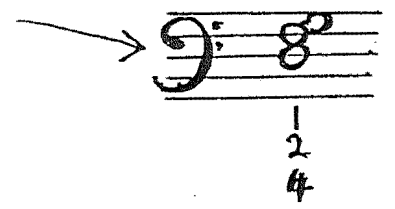
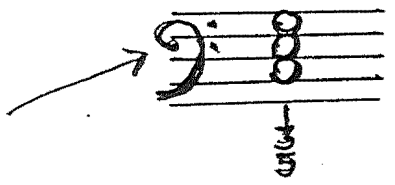


Left Hand

Right Hand




Play C, E + G together.
Play D, F + G together




MODULE THREE

RESTS

Two rests are introduced in Module Three.

The one beat rest ()

The four beat rest ()

(this also means a rest for one bar)

Five examples are given below

Example One



Example Two



Example Three



Example Four



Example Five



MODULE FOUR

TIED NOTES

Tied notes are introduced in Module Four.

Ties join the sound of notes together

Ties often join two notes across a bar line.

A tied note means that the sound is sustained for the total length of both notes.

Five examples are given below:

Example One



Example Two



Example Three



Example Four



Example Five



MODULE FIVE

DOTTED QUARTER NOTES

Dotted quarter notes are introduced in Module Five.

A dot after a notes increases the value of the note by half as much again,

Five examples are given below:

Example One



Example Two



Example Three



Example Four



Example Five

